Avaya DECT R4

Installation and Administration Manual

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Notice

Every effort was made to ensure that the information in this document was complete and accurate at the time of printing. However, information is subject to change.

Warranty

Avaya Inc. provides a limited warranty on this product. Refer to your sales agreement to establish the terms of the limited warranty. In addition, Avaya's standard warranty language as well as information regarding support for this product, while under warranty, is available through the following Web site: http://www.avaya.com/support.

Preventing Toll Fraud

"Toll fraud" is the unauthorized use of your telecommunications system by an unauthorized party (for example, a person who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf). Be aware that there may be a risk of toll fraud associated with your system and that, if toll fraud occurs, it can result in substantial additional charges for your telecommunications services.

Avaya Fraud Intervention

If you suspect that you are being victimized by toll fraud and you need technical assistance or support, in the United States and Canada, call the Technical Service Center's Toll Fraud Intervention Hotline at 1-800-643-2353.

Disclaimer

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How to Get Help

For additional support telephone numbers, go to the Avaya support Web site: http://www.avaya.com/support. If you are:

- Within the United States, click the *Escalation Contacts* link that is located under the *Support Tools* heading. Then click the appropriate link for the type of support that you need.
- Outside the United States, click the *Escalation Contacts* link that is located under the *Support Tools* heading. Then click the *International Services* link that includes telephone numbers for the international Centers of Excellence.

Providing Telecommunications Security

Telecommunications security (of voice, data, and/or video communications) is the prevention of any type of intrusion to (that is, either unauthorized or malicious access to or use of) your company's telecommunications equipment by some party.

Your company's "telecommunications equipment" includes both this Avaya product and any other voice/data/video equipment that could be accessed via this Avaya product (that is, "networked equipment").

An "outside party" is anyone who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf. Whereas, a "malicious party" is anyone (including someone who may be otherwise authorized) who accesses your telecommunications equipment with either malicious or mischievous intent.

Such intrusions may be either to/through synchronous (time-multiplexed and/or circuit-based), or asynchronous (character-, message-, or packet-based) equipment, or interfaces for reasons of:

- Utilization (of capabilities special to the accessed equipment)
- Theft (such as, of intellectual property, financial assets, or toll facility access)
- Eavesdropping (privacy invasions to humans)
- Mischief (troubling, but apparently innocuous, tampering)
- Harm (such as harmful tampering, data loss or alteration, regardless of motive or intent)

Be aware that there may be a risk of unauthorized intrusions associated with your system and/or its networked equipment. Also realize that, if such an intrusion should occur, it could result in a variety of losses to your company (including but not limited to, human/data privacy, intellectual property, material assets, financial resources, labor costs, and/or legal costs).

Responsibility for Your Company's Telecommunications Security

The final responsibility for securing both this system and its networked equipment rests with you - Avaya's customer system administrator, your telecommunications peers, and your managers. Base the fulfillment of your responsibility on acquired knowledge and resources from a variety of sources including but not limited to:

- Installation documents
- System administration documents
- Security documents
- Hardware-/software-based security tools
- Shared information between you and your peers
- Telecommunications security experts

To prevent intrusions to your telecommunications equipment, you and your peers should carefully program and configure:

- Your Avaya-provided telecommunications systems and their interfaces
- Your Avaya-provided software applications, as well as their underlying hardware/software platforms and interfaces
- Any other equipment networked to your Avaya products

TCP/IP Facilities

Customers may experience differences in product performance, reliability and security depending upon network configurations/design and topologies, even when the product performs as warranted.

Product Safety Standards

This product complies with and conforms to the following international Product Safety standards as applicable:

- IEC 60950 or IEC 60950-1, including all relevant national deviations as listed in the IECEE Bulletin—Product Category OFF: IT and Office Equipment.
- CAN/CSA-C22.2 No. 60950 / UL 60950 or CAN/CSA-C22.2 No. 60950-1 / UL 60950-1.

This product may contain Class 1 laser devices.

- Class 1 Laser Product
- Luokan 1 Laserlaite
- Klass 1 Laser Apparat

Electromagnetic Compatibility (EMC) Standards

This product complies with and conforms to the following international EMC standards, as applicable:

- CISPR 22, including all national standards based on CISPR 22.
- CISPR 24, including all national standards based on CISPR 24.
- IEC 61000-3-2 and IEC 61000-3-3.

Avaya Inc. is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Avaya Inc. The correction of interference caused by such unauthorized modifications, substitution or attachment will be the responsibility of the user. Pursuant to Part 15 of the Federal Communications Commission (FCC) Rules, the user is cautioned that changes or modifications not expressly approved by Avaya Inc. could void the user's authority to operate this equipment.

Federal Communications Commission Part 15 Statement:

For a Class A digital device or peripheral:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

For a Class B digital device or peripheral:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no quarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and reveiver.
- Connect the equipment into an outlet on a circuit different from that to which the reveiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Equipment With Direct Inward Dialing ("DID"):

Allowing this equipment to be operated in such a manner as to not provide proper answer supervision is a violation of Part 68 of the FCC's rules.

Proper Answer Supervision is when:

A. This equipment returns answer supervision to the public switched telephone network (PSTN) when DID calls are:

- answered by the called station,
- answered by the attendant,
- routed to a recorded announcement that can be administered by the customer premises equipment (CPE) user
- Routed to a dial prompt

B. This equipment returns answer supervision signals on all (DID) calls forwarded back to the PSTN.

Permissible exceptions are:

- A call is unanswered
- A busy tone is received
- A reorder tone is received

Avaya attests that this registered equipment is capable of providing users access to interstate providers of operator services through the use of access codes. Modification of this equipment by call aggregators to block access dialing codes is a violation of the Telephone Operator Consumers Act of 1990.

Automatic Dialers:

When programming emergency numbers and (or) making test calls to emergency numbers:

- Remain on the line and briefly explain to the dispatcher the reason for the call.
- Perform such activities in the off-peak hours, such as early morning or late evenings.

Toll Restriction and least Cost Routing Equipment:

The software contained in this equipment to allow user access to the network must be upgraded to recognize newly established network area codes and exchange codes as they are placed into service.

Failure to upgrade the premises systems or peripheral equipment to recognize the new codes as they are established will restrict the customer and the customer's employees from gaining access to the network and to these codes.

For equipment approved prior to July 23, 2001:

This equipment complies with Part 68 of the FCC rules. On either the rear or inside the front cover of this equipment is a label that contains, among other information, the FCC registration number, and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

For equipment approved after July 23, 2001:

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the Administrative Council on Terminal Attachments (ACTA). On the rear of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXX. If requested, this number must be provided to the telephone company.

The REN is used to determine the quantity of devices that may be connected to the telephone line. Excessive RENs on the telephone line may result in devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed 5.0. To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For products approved after July 23, 2001, the REN for this product is part of the product identifier that has the format US:AAAEQ##TXXX. The digits represented by ## are the REN without a decimal point (for example, 03 is a REN of 0.3). For earlier products, the REN is separately shown on the label.

Means of Connection:

Connection of this equipment to the telephone network is shown in the following table:

Manufacturer's Port Identifier	FIC Code	SOC/ REN/A.S. Code	Network Jacks
Off premises station	OL13C	9.0F	RJ2GX, RJ21X, RJ11C
DID trunk	02RV2.T	AS.2	RJ2GX, RJ21X, RJ11C
CO trunk	02GS2	0.3A	RJ21X, RJ11C
	02LS2	0.3A	RJ21X, RJ11C
Tie trunk	TL31M	9.0F	RJ2GX
Basic Rate Interface	02IS5	6.0F, 6.0Y	RJ49C
1.544 digital interface	04DU9.BN	6.0F	RJ48C, RJ48M
	04DU9.1KN	6.0F	RJ48C, RJ48M
	04DU9.1SN	6.0F	RJ48C, RJ48M
120A4 channel service unit	04DU9.DN	6.0Y	RJ48C

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment, for repair or warranty information, please contact the Technical Service Center at

1-800-242- 2121 or contact your local Avaya representative. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant.

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

Installation and Repairs

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. It is recommended that repairs be performed by Avaya certified technicians.

FCC Part 68 Supplier's Declarations of Conformity

Avaya Inc. in the United States of America hereby certifies that the equipment described in this document and bearing a TIA TSB-168 label identification number complies with the FCC's Rules and Regulations 47 CFR Part 68, and the Administrative Council on Terminal Attachments (ACTA) adopted technical criteria.

Avaya further asserts that Avaya handset-equipped terminal equipment described in this document complies with Paragraph 68.316 of the FCC Rules and Regulations defining Hearing Aid Compatibility and is deemed compatible with hearing aids.

Copies of SDoCs signed by the Responsible Party in the U. S. can be obtained by contacting your local sales representative and are available on the following Web site: http://support.avaya.com/DoC.

Canadian Conformity Information

This Class A (or B) digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A (ou B) est conforme à la norme NMB-003 du Canada.

This product meets the applicable Industry Canada technical specifications/Le présent materiel est conforme aux specifications techniques applicables d'Industrie Canada.

European Union Declarations of Conformity

Avaya Inc. declares that the equipment specified in this document bearing the "CE" (Conformité Europeénne) mark conforms to the European Union Radio and Telecommunications Terminal Equipment Directive (1999/5/EC), including the Electromagnetic Compatibility Directive (2004/108/EC) and Low Voltage Directive (2006/95/EC).

Copies of these Declarations of Conformity (DoCs) can be obtained by contacting your local sales representative and are available on the following Web site: http://support.avaya.com/DoC.

European Union Battery Directive

Avaya Inc. supports European Union Battery Directive 2006/66/EC. Certain Avaya Inc. products contain lithium batteries. These batteries are not customer or field replaceable parts. Do not disassemble. Batteries may pose a hazard if mishandled.

Japan

The power cord set included in the shipment or associated with the product is meant to be used with the said product only. Do not use the cord set for any other purpose. Any non-recommended usage could lead to hazardous incidents like fire disaster, electric shock, and faulty operation.

本製品に同梱または付属している電源コードセットは、本製品専用です。本製品以外の製品ならびに他の用途で使用しないでください。火災、感電、故障の原因となります。

If this is a Class A device:

This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

この装置は，情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラス Ａ 情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

If this is a Class B device:

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI). If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

この装置は，情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラス Ｂ 情報技術装置です。この装置は，家庭環境で使用することを目的としていますが，この装置がラジオやテレビジョン受信機に近接して使用されると，受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。

Downloading documents

For the most current versions of documentation, see the Avaya Support Web site:

http://www.avaya.com/support

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System Description

Introduction

This chapter gives a general description of the Avaya IP-DECT System, an IP based cordless telephony and messaging system for connection to private telephone exchanges.

The IP-DECT system supports the DECT standard which gives a full integration of messaging and voice functions. The DECT-system can be integrated with external applications such as different alarm systems. This gives features such as; messages to telephone, alarm from telephone, message acknowledgement, and absent handling.

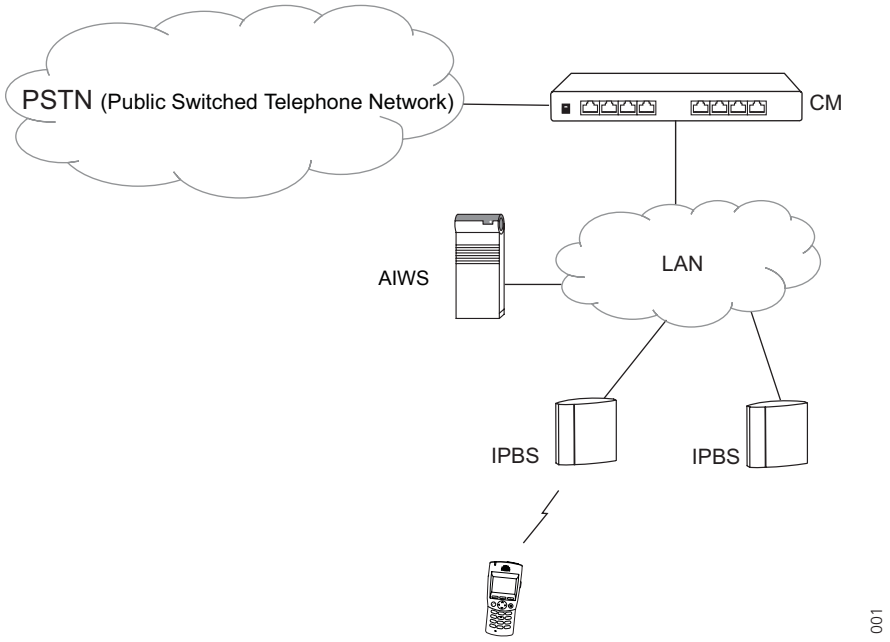
Avaya IP-DECT System Overview

The Avaya IP-DECT System enables extended sales opportunities for on-site wireless communication. For example, IP-DECT enables cost efficient smaller systems, with modularity up to very large installations, feature rich distributed system installations (local office/site) and a wide variety of modern connection possibilities.

The Avaya IP-DECT system is built up by the following components:

- DECT Cordless Telephones
- IP-DECT Base Station (IPBS)
- Avaya Aura™ Communication Manager
- Avaya In-Building Wireless Server (AIWS), optional

Figure 1: IP-DECT System Overview



Supported Standards

- H.323 XMobile
- G.711 (a-law and mu-law)
- G.723-53
- G.726-32
- G.729-A/AB

System Functions

The Avaya IP-DECT system is designed to enable voice traffic, messaging and alarm handling between cordless telephones within an enterprise LAN. For details see the *Function Description, Avaya IP-DECT System*.

DECT Functions

DECT is a digital wireless technology which originated in Europe, but is now being adopted increasingly worldwide, for cordless telephones, wireless offices and even wireless telephone lines to the home. DECT has been designed and specified to interwork with many other types of network, such as the PSTN, ISDN and GSM.

Common IP-DECT functions are handled entirely within the IP-DECT system.

Roaming and Handover

The IP-DECT system supports roaming between all IPBSs in the system. It also supports handover if there is overlapping speech coverage.

LAN/WAN

There are several vendors providing components needed to deploy a LAN/WAN. In order to achieve optimal performance for IP-DECT the following is recommended:

- Quality of Service (QoS)
- The infrastructure should be connected to a switched network. (i.e hubs or repeaters should be avoided)
- Depending on network size, a backbone of least 100 Mbps should be used.

LDAP

The LDAP protocol is used in the IP-DECT system between two or more Master IPBS if different network regions shall be used. It is also used for Standby Master.

TCP/IP and UDP/IP Port Documentation

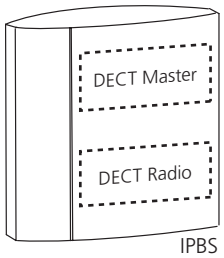
For detailed information, please ask your Avaya contact for document CID 139993.

IP-DECT System

The major parts of the Avaya IP-DECT system are the IP-DECT Base Station. It consists of the software components DECT Radio (interface) and DECT Master.

There is only one DECT Master in a single site IP-DECT system. In a multi-site IP-DECT system, each site is connected with the Communication Manager through an own DECT Master and an XMobile trunk.

Figure 2: Software components of the IPBS

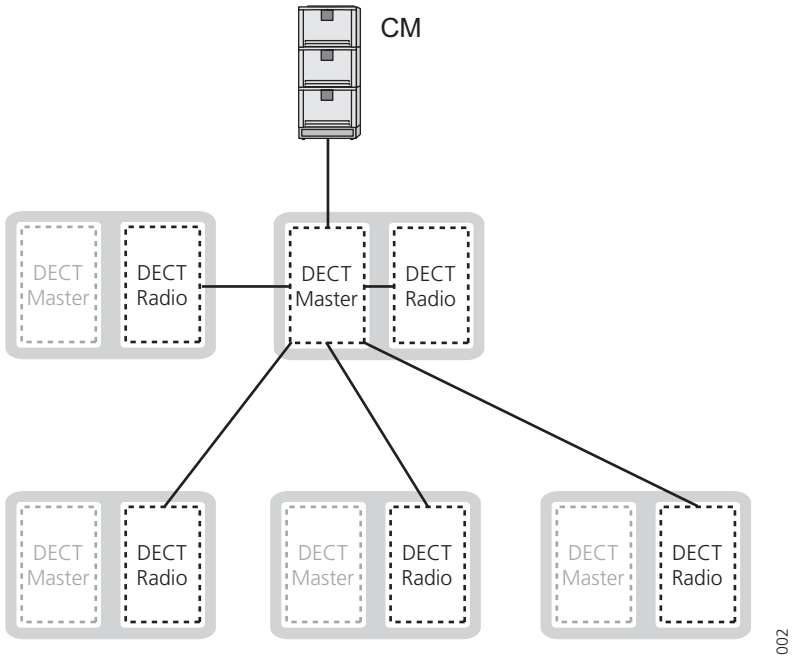


The IPBS is connected to an IP network through the LAN interface, which provides connectivity to the Communication Manager.

System layout

All IPBS are connected to the LAN but it is only the DECT Master that have a logical connection to the Communication Manager. It is a flat layout where all DECT Radios are logically communicating directly to the DECT Master, see figure 3 on page 21.

Figure 3: Logical connections of the software components DECT Master and DECT Radio



DECT Master

The DECT Master is a software interface between the IP-DECT system and the Communication Manager. The DECT Master is responsible for all DECT telephones in the system.

The DECT Master knows which DECT Radio the telephones are located to, that is which DECT Radio in the system that received the latest location registration message from the telephone. A call to a telephone is directed only to the DECT Radio where the telephone is located. Thus limiting the H.323 XMobile and DECT load in the system.

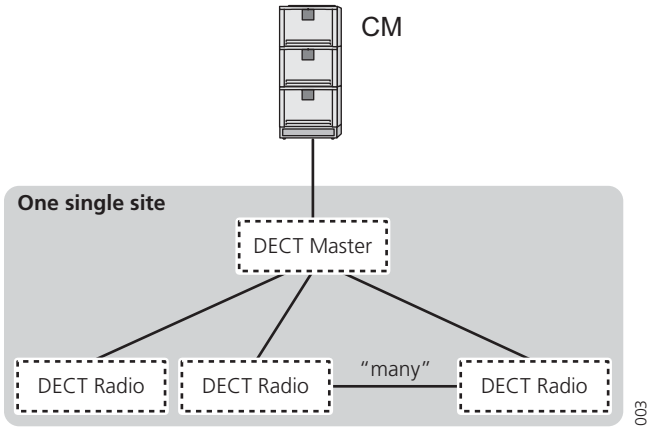
DECT Radio

The DECT Radio is a software interface between DECT and H.323 XMobile. A DECT Radio always communicates with one DECT Master. The DECT Radio only has information of the DECT telephone which currently are on the same radio channel.

Single Site Installation Example Layout

The layout in figure 4 can be used for customers with a single site installation.

Figure 4: Single site layout with one IP-DECT Master



The lines displayed between the Communication Manager, the DECT Master and the DECT Radios in figure 4 are used to indicate the logical connection between the software modules.

Note:

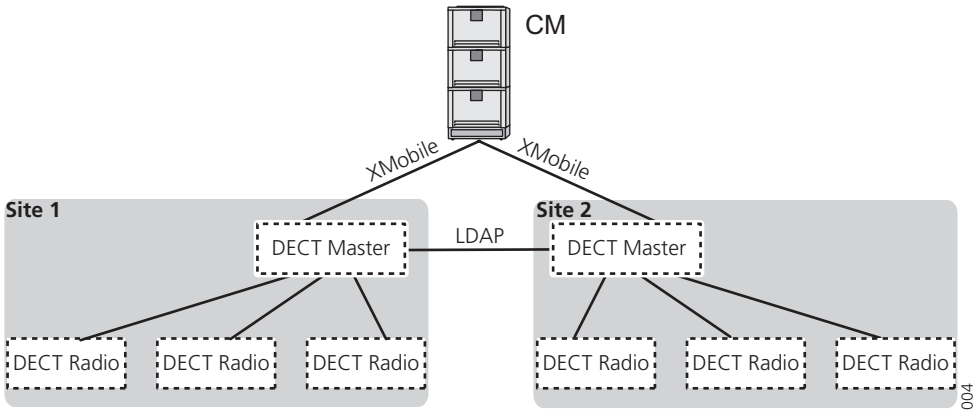
The figure shows the software components. An IPBS includes both the software components DECT Master and DECT Radio.

One IPBS must be assigned the role as master, this IPBS can also act as a DECT Radio and will have an active DECT Radio and an active DECT Master software component. All other IPBS will only have the software component "DECT Radio" active. The software component "DECT Master" will only be active in the Master, in all other it will be deactivated.

Multiple site installation

The layout as in a single site can also be used for customers with an installation on several sites. The sites may have one DECT Master per site and one or several IPBSs at each site. The Communication Manager is centrally located (may be one of the sites), see figure 5.

Figure 5: Multiple site layout with one IP-DECT Master per site



The lines displayed between the Communication Manager, respective the DECT Master and the DECT Radios in figure 5 are used to indicate the logical connection between the software modules.

Note:

The figure shows the software components. An IPBS includes both the software components DECT Master and DECT Radio.

External handover is only possible to do within each site, not between them.

Synchronization

Synchronization within the IP-DECT system is done by:

- Air synchronization (IPBS)

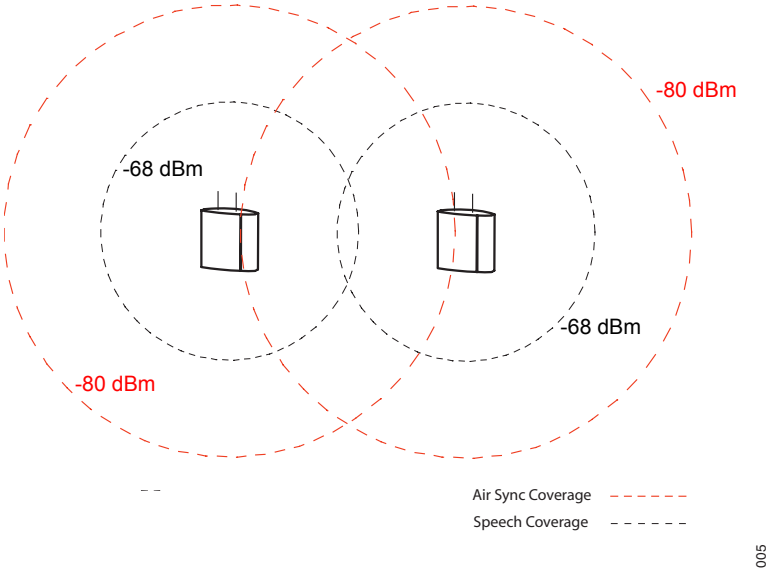
Air Synchronization

IP-DECT base stations uses the DECT air interface to synchronize to each other. This makes it possible to fulfil the CAP standard and to use the existing portables.

One IPBS is configured as a synchronization master. From this sync master all other IPBSs adjust there internal crystal oscillator to have the same frequency drift as the master. This does not mean all IPBSs need to be within coverage of the master base, a IPBS running in slave mode can synchronize to another IPBS in slave mode.

It is not needed to configure what IPBS to synchronize to. This is handled automatically by introducing a proprietary message sent from the IPBSs (called "air sync hop").

Figure 6: Air- and speech sync radius.



As a single IPBS failure may spread to other IPBSs it is needed, for critical systems, to install the IPBSs to always be within coverage of at least two alternative IPBSs receiving sync from.

It is also possible to configure one backup sync masters in case of failure of the sync master.

Speech radius: the radius of the circle (circular radiation patterns of the IPBS antennas are assumed), around a particular IPBS, in which portable parts can communicate with that IPBS, see figure 6.

Note:

It is recommended to have at least -68 dBm for good speech quality. The -68 dBm circles should overlap to ensure seemless handover between 2 base stations (The handset should receive the next base station with -62 dBm at the -68 dBm circle of the first base station).

Sync radius: the radius of the circle, around a particular IPBS, in which other IPBSs lose synchronization with that IPBS with a given synchronization loss probability. This means that the size of the sync radius depends on requested probability of losing synchronization, see figure 6.

Note:

A value of -80 dBm is a recommendation to ensure good sync conditions.

IP-DECT System Management

On Site Management

The IPBS is managed using a web GUI accessed over the LAN.

Remote Management

The IPBS has support for remote setup and configuration over the Internet using a VPN client over IP networks.

IP Administration Security

All IP administration is based on secure IP. All access to the IPBS is password protected in order to prevent unauthorised access.

Software Upgrade

The IPBS has support for software download and it is possible to do a software upgrade using the web interface. It also has support for automatic firmware update from a web server or a TFTP server.

VoIP Signalling Protocols

The protocol used for VoIP signalling is H.323 XMobile which is a proprietary extension of H.323. H.323 is in fact a set of protocols designed to enable multimedia traffic in single LANs.

H.323

H.323 was developed by the International Telecommunications Union (ITU) and was designed from a telecommunications perspective. Ratified in 1996 it has become a defacto choice for interoperability among VoIP equipment. It is a standard that provides specification for computers, equipment, and services for multimedia communication over networks that do not provide a guaranteed QoS.

H.323 equipment can carry real-time video, audio, and data, or any combination of these elements. Included in the H.323 standard are H.225, H.245 and the IETF protocols RTP and RTCP, with additional protocols for call signalling, data and audiovisual communications.

H.323 products and services offer the following benefits to users:

- Products and services developed by multiple manufacturers under the H.323 standard can interoperate without platform limitations. H.323 conferencing clients, bridges, servers, and gateways support this interoperability.
- H.323 provides multiple audio and video codecs that format data according to the requirements of various networks, using different bit rates, delays, and quality options. Users can choose the codecs that best support their computer and network selections.

H.323 XMobile

The protocol between the IP-PBX and the Master IPBS is based on H.323 with some minor differences called XMobile, such as:

- No need to register the DECT Wireless Terminal with the Gatekeeper (no RAS procedure neccessary)
- Shared trunk between the IP-PBX and the Master IPBS where all telephony signalling is going

IP-DECT Planning and Deployment for the IP-DECT System

Each unit provides radio access within a pre-defined area called a cell. To enable seamless handover for the mobile devices, cell planning is of most importance when deploying the IP-DECT System. Refer to the documentation from the DECT supplier and Planning an IP-DECT System on page 31.

Avaya IP-DECT System Components

The Avaya IP-DECT system is created using Avaya developed products, as well as third-party products. This section gives a brief description of the components needed.

DECT Cordless telephones

The DECT Cordless telephones are available in a two versions: Avaya 3720 DECT Telephone with basic functionality and Avaya 3720 DECT Telephone with advanced functionality.

The IP-DECT system has support for all Avaya DECT cordless telephones. No changes of the telephone is needed.

IPBS

The IPBS has eight channels used for speech and messaging, it also has one channel which is reserved for broadcast messages. For more information on the IPBS, see Installing and operating IPBS on page 51.

Communication Manager

The Communication Manager (Avaya Communication Manager) is a private branch exchange that switches calls between VoIP users on local lines while allowing all users to share a certain number of external phone lines. The Communication Manager can also switch calls between a VoIP user and a traditional telephone user.

With a Communication Manager no separate networks are necessary for voice and data communications. It employs converged data and voice networks. This means that Internet access, as well as VoIP communications and traditional telephone communications, are all possible using a single line to each user.

Avaya In-Building Wireless Server (AIWS)

The Avaya In-Building Wireless Server (AIWS) offers wireless services in IP-DECT such as SMS cordless telephone-cordless telephone, sending text messages from a web browser and access to a central phonebook. It also acts as a messaging and alarm gateway between open messaging communication protocols and IP-DECT telephones.

The AIWS is based on Linux and runs on a highly reliable solid state appliance.

Available functionality (depending on variant, see Variants on page 485) are as follows:

- Sending messages cordless telephone-cordless telephone
- Access to built-in central phonebook
- Access to external directory over LDAP
- OAP messaging and alarm protocols
- NTP support (master and slave)
- AIWS configuration fully web based

System Capacity

Max No. of Devices in an Avaya IP-DECT System

Cordless telephones:	2000
IP-DECT Base Stations (IPBSs):	1000

Traffic Capacity

Speech calls:	10 000/hour
SMS:	10 000/hour

Speech Channels per single device

IP-DECT Base Station (IPBS)	8 simultaneous calls

Planning an IP- DECT System

Introduction

This chapter gives a description on how to plan the IP-DECT system. The IP-DECT is an IP based cordless telephony and messaging system for connection to private telephone exchanges.

The IP-DECT system supports the DECT standard which gives a full integration of messaging and voice functions. The DECT-system can be integrated with external applications such as different alarm systems, networks and e-mail. This gives features such as; messages to cordless telephones, alarm from cordless telephones, message acknowledgement, and absent handling.

Wired LAN/Backbone Requirement

It is highly recommended that a Network Assessment of the LAN is carried out before an installation or when new applications and/or user density is added to secure the voice quality.

There are several things to consider when designing a network:

- In order to achieve optimal performance the infrastructure should be connected to a switched network (no hubs or repeaters).
- When setting up a network supporting both voice and data it is recommended that voice and data are separated on different VLANs.
- Maximum capacity of the VoIP traffic may not exceed 25% of the capacity of the network.
- Maximum capacity of the network may not exceed 75% of the total capacity of the network, including the VoIP traffic.
- No firewalls should be used in the network. If they are anyway, tunneling or application aware firewalls should be used.
- Depending on network size, a backbone of at least 100 Mbps should be used.

In a switched network the transmission delay should not be an issue but if voice traffic is routed a significant transmission delay could be added. If the transmission delay is too long an echo will appear in the voice path impacting the systems voice quality. The transmission delay will also add to the speech delay.

Jitter in voice packages will also add to the speech delay since the portable will adjust the jitter buffer size.

Note:

There are several tools from third-party vendors that is used to provide detailed and useful information when performing site surveys.

End-to-End QoS

To achieve QoS for a phone call, it is important that QoS is enabled or managed all the way between the two end points. By following a speech packet as it travels along the path between the end points, it is possible to identify all network segments and transitions where QoS needs to be managed.

Base Station Planning

The major task in installing an IP-DECT system is defining the number of base stations required to cover an area to a satisfactory level. This chapter describes how a base station planning can be made in order to gain full area coverage.

Small sites usually have a homogeneous layout, it is therefore easy to predict the field pattern of the base station which makes the planning relatively easy. The larger the site, the more complex the site survey becomes. Since a larger site often is less homogenous the base station placing will be more difficult. Generally the client has particular requirements which have to be considered, these requirements can be coverage in a lift, underground car park, conference rooms, outdoors and so on.

Base station planning is not difficult, on the contrary, but size, architecture and structure of buildings all have influence on the field pattern which cannot be foreseen. The quickest and simplest way is therefore measuring. During a site survey, an average cell size can be determined, with help of a site survey tool. The average cell size is the foundation of a base station planning.

The steps in base station planning are as follows:

1. Find out the client specific requirements, see Client's Requirements on page 34.
2. Determine the average cell size using the site survey tool, see Determine the Average Cell Size on page 43.
3. Decide base station positions, see Location of the Base Stations on page 47.
4. Make a base station plan, see Making a Base Station Plan on page 50.
5. Perform a measurement using the site survey tool to confirm that speech and air sync coverage is as expected.

Client’s Requirements

The most important thing when planning an IP-DECT system is that the system meets the needs and requirements of the customer. Discuss with the customer where high quality is of absolute necessity and whether there are areas where it is sufficient for people to be available but with lower sound quality, for example outdoors or in a production hall.

Also discuss whether special areas such as lifts, stairwells, basements, indoor car parks, toilets, maintenance shafts, and so on should be covered.

In some areas and departments, for example: sales, purchase, technical support departments, canteens, a higher traffic capacity is needed. Consequentially these areas requires additional base stations, see Traffic Capacity of the System on page 45 for information how to calculate traffic capacity. Discuss with the customer where a higher traffic capacity is needed.

Base Station Coverage

This section describes how architecture, building elements, and special areas affect the coverage and the placing of the base stations.

The radio environment or the cell that is covered by a base station is not of a spherical shape as often suggested in figures. If a snapshot could be taken of its form, it would become clear that its shape is much more irregular. The momentary size and shape are dependant on the material of which walls and floors are made, the position and material of furniture, machines, air-conditioning and the position of the base station in such an environment. Because of these unpredictable conditions it is not possible to give any hard rules on calculating the number of base stations in a given situation.

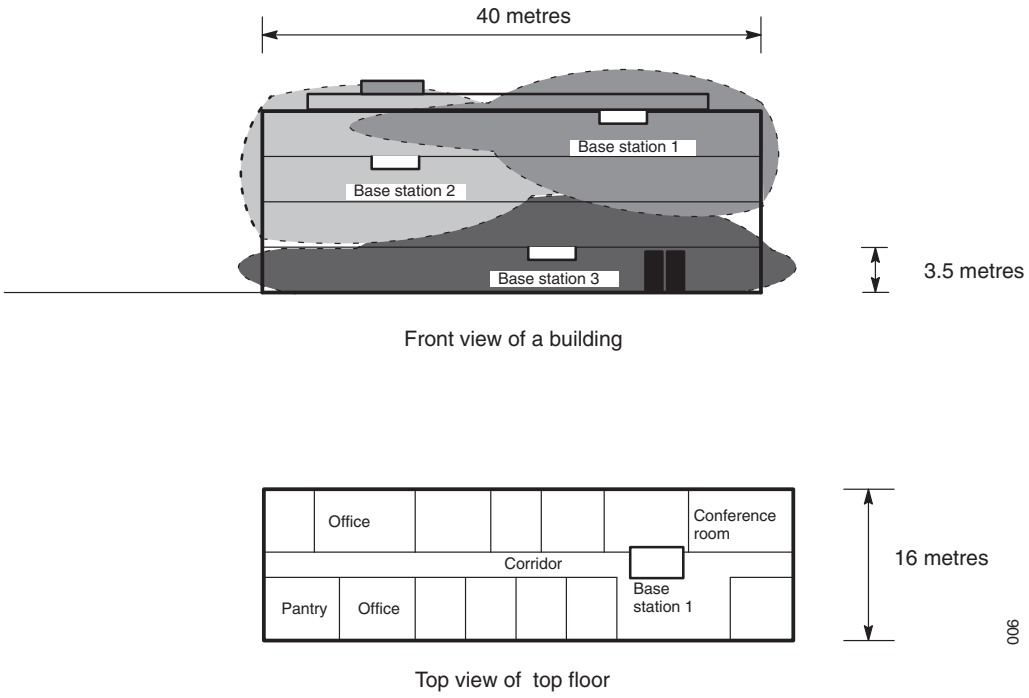
- The in-house cell size in offices can have a radius of between 10 and 30 meters, see figure 7 on page 36. The cell size in exhibition or production halls can have a radius of up to 200 metres.
- The free space (outdoors) cell radius can be up to 300 metres.
- Base stations may partially cover the floors immediately above and below. The useful range through floors and ceiling varies between 0 and 8 m (2 floors) radius; see figure 7 on page 36.

Architecture

This section describes how the architecture of the building can affect the coverage.

- Central areas giving access to stairs and lifts may require extra base stations due to heavier constructions.
- Coverage in lifts may require base stations closer to or in the lift shaft.
- Corners and irregularities in the construction such as partial renovation, extensions of older buildings, and so on have influence.
- Concentration of air-conditioning ducts or other technical installations may influence the field pattern and thus the coverage.

Figure 7: Example of the locations of base stations in a building.



Building Elements

This section describes how different building elements can affect the coverage.

- The cell size is dependant on the material of which walls, ceilings and floors are made.
- Plain, light or reinforced concrete, wood and plaster absorb and pass radio waves in different ways.
- Metal walls and large metal cabinet rows reflect all signals, resulting in a greatly reduced coverage in areas behind these objects.
- X-ray rooms in hospitals protected by lead walls and computer rooms in banking buildings protected against unwanted interference do not allow radio signals to enter.
- Exhibition halls or production halls may give reflections due to large metal structures. This causes interference which reduces the capacity and coverage range of the base station.

Walls

Walls, ceilings and floors have large impact of the coverage range, different types of walls have different impact on the signal range. For list of the most common types and the approximate range achieved through these materials, see the table below.

Type	Examples	Range in meters
Stud wall	Plaster	30-60
Concrete		10-30
Reinforced concrete	Fire wall	0-10
Stone/brick		30-50
Metal	A panel on brickwork.	0-10
Wood		30-60
Wired glass	Fire protection.	0-10
Surface coated float glass	Only of importance for coverage outside if the base station is installed inside.	30-50
None	Open-plan office or outdoors.	150-300

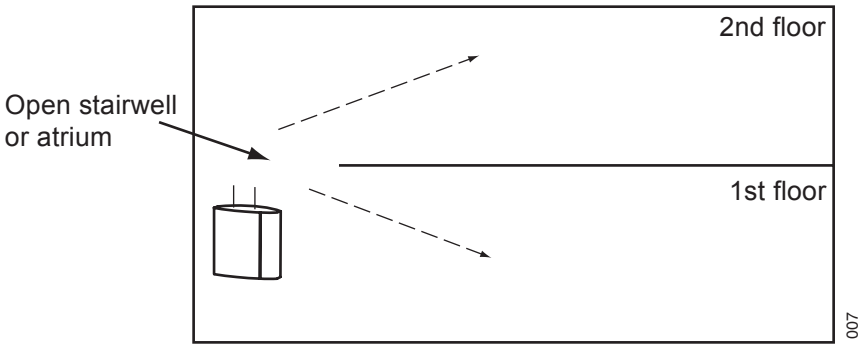
Note:

The values in this table are estimated values. Furniture (cupboards etc.), and the amount of movement in the area to be covered, for example, cranes in a production hall (see also Metal Halls on page 40) are further factors that affect the coverage range.

Ceilings and Floors

The difference between ceilings and floors compared to walls lies in the materials used. Concrete and reinforced concrete are the main materials and it is important to determine the level of coverage of a base station on the floor above and below. For ‘normal’ concrete this coverage extends to a radius of approximately 15-20 metres which provides coverage for the floors below and above. An open stairwell or an atrium can in some cases be used to provide coverage to two floors at the same time, see figure 8.

Figure 8: Base station covering two floors



Fire-resistant walls/doors

The same facts applies for fire walls as for normal walls mentioned in the section above. However, fire doors are usually open during the site survey, it is important to close the fire doors before doing the final site survey measurement and before finalising the base station plan. Should a fire break out and the doors then be closed, there must of course still be sufficient coverage.

Special Areas

This section describes a number of special areas which must be considered when doing a base station planning, and how to ensure full DECT coverage in these areas.

Outdoors/car park

Coverage outdoors is usually not a problem since there are few or no obstacles. The base station location depends on the client and on the size of the area to be covered. If the client wishes to have as few base stations as possible installed outside (because of the costs of the outdoor housing), it is possible to install one or more base stations with the antennas in front of a window.

The base station must be able to ‘see’ as much as possible of the outdoor area to be covered (that is, there must be as few obstacles as possible between the base station and the covered area). Ensure that a measurement is carried out in order to check how much coverage a base station provides to the outdoor area, the intention is not to install all the base stations in front of windows, since this is not the ideally position to provide indoor coverage (normally 1-2 base stations are sufficient).

Type of glass	Range in meters
Normal glass	150-300
Surface coated float glass	30-50
Wired glass (fine-mesh)	0-20

Lift

If coverage in lifts are desired, locate the base station close to the lift, preferably at the front in a way that the base station can ‘see’ the front[1]. This is because a lift is usually surrounded on three sides by a reinforced lift shaft, with the only opening being at the front. Locating a base station in front of a lift is usually not the most ideal position for the planning as a whole. It is usually the case that one or more extra base stations will be required to provide coverage for a lift. The base station will generally also provide coverage for the storey above and below the floor on which it is installed.

Stairwell

The major problem with stairwells is that they are often sited in a corner of the building. Coverage is not a problem in itself, but it must be seen in the context of the overall planning. There are various ways of providing coverage for a stairwell. Either the base station is installed directly in the stairwell as a dedicated base station for the stairwell, or it is installed in the close vicinity of a stairwell. The method depends on the type and location of the stairwell (is it an open or closed stairwell; is it sited in a corner of the building or in the centre and so on).

Toilet Rooms

Toilet rooms are generally in awkward positions for a site survey: behind or next to lifts, in or next to stairwells or in a corner of the building. A base station installation in the toilet room itself can be considered. If placed outside the toilet room it should be placed in the vicinity of the toilet room in a location where the base station can ‘see’ as much as possible of the toilet room (preferably the entrance because doors are generally made of wood and these damp the signal less than the walls).

If the base station is placed in the vicinity of the toilet room, locate it in a way that it provides coverage for as much of the rest of the floor as possible.

1. ‘see’: there are as few obstacles as possible such as walls etc. between the base station and the lift.

Maintenance Shaft

In larger buildings there is usually the requirement that coverage also be provided in maintenance rooms. The most common are the rooms for the lift and ventilation system. The lift maintenance room is often on the roof or in the basement. The ventilation maintenance room is usually on the roof. Do not omit these rooms they should be discussed with the client to avoid the client being faced with surprises. A well-positioned base station on the top floor (20 to 30 metres at most from the room where coverage is required) usually provides sufficient coverage for the maintenance rooms on the roof.

Basement and Indoor Car Park

It can be difficult to provide sufficient coverage in basements and indoor car parks due to the usually heavy constructions.

Metal Halls

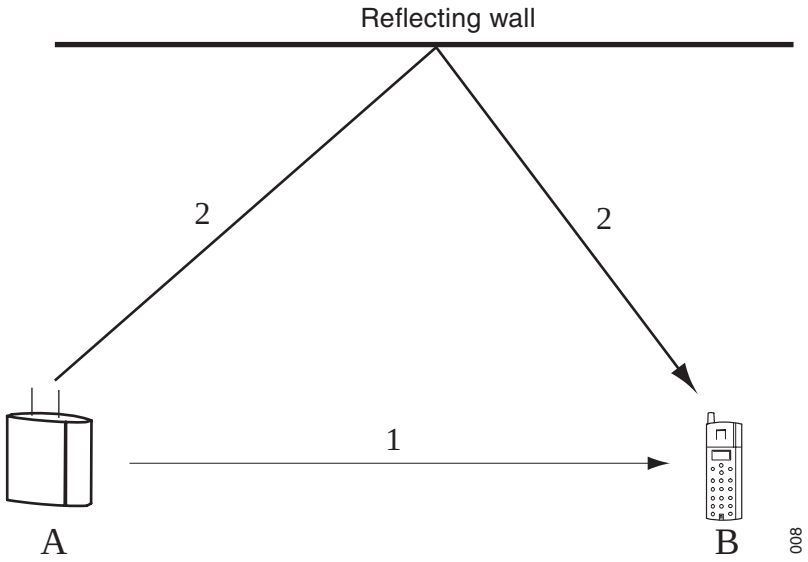
When providing coverage in a metal hall (for example, a production hall or storage building), there are a number of issues which call for additional attention. The dimensions of the hall and the material used (metal, concrete, brick etc.) are important deciding factors in the hall's radio reception. Every hall is different, and it is very difficult to predict the radio reception. Check carefully, therefore, whether the walls are made of metal, what the hall's dimensions are, whether the roof is reflective, what is contained in the hall, and whether objects in the hall are stationary or constantly moving.

In the case of poor speech quality in a metal hall, this can be attributed to time delay spread and/or the actuation of the soft suppressor. Both are explained in greater detail below.

Time Delay Spread

Time delay spread can be compared with dispersion in cables and fibres. This means that the radio signal can travel by various paths to reach the user because the signal can reach the user directly but also via reflections. These possibilities are illustrated in the figure below.

Figure 9: Time delay spread



The base station at corner A reaches the cordless phone at corner B by means of a direct signal (signal 1) and by means of a reflected indirect signal (signal 2). Generally there are many reflected signals reaching the cordless phone. In general the paths travelled by these signals are not equal which means in turn that they will arrive at the cordless phone at different times.

A DECT signal consists of frames of 420 bits transmitted every 10 ms. The bit length for DECT is 0.868 µs. Mutes (Interruptions in your conversation) and clicks on the line will occur if the time difference between the various received signals is of the order of 1/10 bit length. If this occurs, the receiver has difficulty in distinguishing between the different transmitted bits. Therefore, the base stations in a metal hall must be sited in a way that the time delay spread is minimized. This means in turn that you must locate the base stations such that the number of reflections is minimized.

Locations for Base Stations in Metal Halls

Apart from the time delay spread there are a number of general rules to consider when placing a base station:

- Install a base station in line of sight (The base station ‘sees’ the user).
- It is possible to increase the number of base stations at those locations that are important to the client, but the speech quality can deteriorate in other places in the hall because the cordless phone has to carry out more handovers.
- Place the base station at a minimum height of 3 metres as otherwise it is highly possible that something will be placed in front of the base station, and this prevents the materials and machines in the hall reflecting the signal.
- Ensure that the distance between the base station antennas and a metal wall is at least 30 centimetres to avoid interference with the impedance of the antennas.

All these considerations, of course, depend on the dimensions of the hall and the type of antenna which you are using.

Determine the Average Cell Size

To satisfy coverage and traffic demands, the site must be surveyed in order to determine the number and position of base stations. To do a site survey, a site survey tool and ground plans of the floors are required. Samples must be taken to determine an average cell size. With the average cell size, base station positions can be indicated on the map, together with the area covered by each base station. After this, the planned positions can be verified with the site survey tool and with help of the traffic requirements a final plan can be made.

Note:

Since coverage for air sync and speech differs, two average cell sizes need to be determined, one for the speech coverage and one for the air sync coverage.

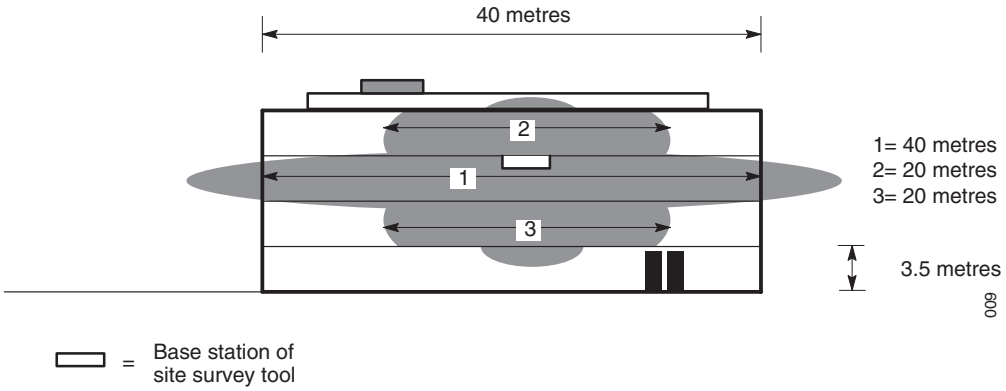
For information on how to use the site survey tool, please refer to the appropriate user's guide. The principle of a site survey is as follows:

Observe the Building to Find a Typical Area

Modern buildings usually have standard constructions. In older buildings, due to renovations or expansions, areas with different structures may exist. However, inside these areas a uniformity in structure can be found again.

Find an area with a typical structure for the building and of about the expected cell size. This area will be used to determine the typical cell size. When having a building with different structures, do so for each of those areas, so that differences in 'typical cell size' can be detected.

Figure 10: Measurement of typical cell size



Measure the horizontal cell size on the middle floor, see (1) in figure 10

The cell size can be determined as follows:

1. Install the site survey base station in the middle of the 'typical area'.

2. Walk away from the base station with the cordless phone. Also enter rooms to the left and right.
3. Determine the edge of the cell by means of the limit warning or by looking to the Link Info display and listening to the sound quality.
4. Do the same in the opposite direction.
5. This is the horizontal coverage on the floor of the base station.

Measure horizontal range on floor above, see (2) in figure 10

Go to the floor above, leaving the base station on its current location and measure the horizontal coverage here.

Measure Horizontal Range on floor below, see (3) in figure 10

Go to the floor below, leaving the base station on its current location and measure the horizontal coverage again.

Note:

If the building is transparent to radio signals, the vertical coverage can reach to yet another floor above and below.

In this way the horizontal and vertical coverage of a single base station in a typical area is found, see figure 10. The cell size found can be taken as an average, used to calculate the total number of base stations. Depending on the size of the building and the type of construction, one or two more ‘random checks’ in typical areas can be done to verify the first measurement. The typical cell size is determined by averaging the values.

Traffic Capacity of the System

The traffic capacity of the IP-DECT system is mainly determined by the number of base stations and in exceptional cases also by the LAN bandwidth. A single base station has a capacity of 8 simultaneous calls.

The traffic capacity of the IP-DECT system is determined by:

- Grade Of Service (GOS) accepted by the customer.
- Number of speech circuits available - 8 per IPBS.

The grade of service is the probability that a call cannot be made because of congestion in the system. The customer has to indicate which grade of service is acceptable. A grade of service of 1%, or 0.01, means an average of 1 lost call in every 100 calls.

The two parameters mentioned above (GOS and number of speech circuits) and the total amount of traffic (erlang) that is required, are related to each other. The table below shows an except of these relations. Practically, this table is used to calculate from a given GOS and erlang value the number of base stations needed. The erlang value is the total traffic generated by all cordless phone users.

A base station provides for 8 speech circuits.

Number of base stations	**Speech circuits**	**Grade Of Service (GOS)**			
		2%	**1%**	**0.5%**	**0.1%**
1	8	3.6	3.2	2.7	2.1
2	16	9.8	8.9	8.1	6.7
3	24	16.6	15.3	14.2	12.2
4	32	23.8	22.1	20.6	18.2
5	40	31.0	29.0	27.3	24.5
6	48	38.4	36.1	34.2	30.9
7	56	45.9	43.3	41.2	37.5
8	64	53.4	50.6	48.3	44.2

The table below shows what erlang values practically mean in call-minutes for a cordless phone.

mE	Minutes per hour	mE	Minutes per hour
50 100 150 200	3 6 9 12	250 300 500 750	15 18 30 45

Example:

A customer ordering a system with 55 cordless phones, generating 200 mE each in average, requires a system with a traffic capacity of 11 E. With an accepted GOS of 0.5% the number of base stations is found as follows:

The total traffic is 11 E. In the column of 0.5% GOS, the next higher value of 11 E is 14.2 E, resulting in 3 base stations. The system shall be equipped with 3 base stations, offering the client 14.4 E instead of 11. This means that the system has an over-capacity 3.2 E, which allows expansion of the system with 16 cordless phones without reducing the grade of service or the need of more base stations.

Traffic Capacity of the Base Stations

The total traffic that is being generated by all cordless phones of the systems should be in accordance with the capacity of the cordless network as well. A base station, having 8 channels available, has an erlang value of 2.7 with a GOS of 0.5%. This value can be read from the table above. This means that each base station can serve 18 cordless phones, assuming that cordless phones generate 150 mE each during busy hour, (13.5 cordless phones if 200 mE each).

Example:

Suppose that in the building of the customer in the example in Traffic Capacity of the System on page 45, full coverage can be achieved by 4 base stations. This means that all cordless phones generate together 55 x 0.200 = 11 E, while the base stations traffic capacity is only 4 x 2.7 = 10.8 erlang. This is too little. This discrepancy can be solved by adding another base station nearby the busiest part of the company.

Practically, the total capacity offered by the cordless network is generally more than sufficient, but this is from an average point of view. On certain places, traffic demands may vary such that locally the network is often blocking, or has a lower GOS than required. For instance a purchase department may easily generate 300 mE per cordless phone during busy hour, thus, when e.g. with 6 persons giving a very high load on the base station close by. It may be necessary to add a base station in this area to have enough capacity for others to call as well. Also think of e.g. canteens during lunch time etc.

Location of the Base Stations

Once the surroundings are analysed and the average cell size is determined an exact position for each base station must be decided. The most important thing when deciding the location is to ensure sufficient coverage and traffic capacity.

Deciding factors when determine the location are as follows:

- Client's requirements, see Client's Requirements on page 34.
- Coverage and traffic capacity, see Base Station Coverage on page 35.
- Synchronization, see Synchronization on page 47.
- LAN Access, see LAN Access on page 47.
- Power the base stations, see Power the Base Stations on page 47.
- Different types of antennas, see Antennas on page 48.

Synchronization

Air Sync Coverage

Each IPBS must be placed within the air sync coverage of at least one other base station. Since the air sync cover radius is somewhat larger than the speech radius it is often enough to consider the speech coverage when placing the base stations.

Always ensure that all IPBS are able to synchronize with, preferably two, but at least one other base station.

LAN Access

Access to the LAN must be considered when placing the IPBSs, it should be placed as close as possible to existing LAN ports.

The cable length limitation of the ethernet 802.3 10/100base-T is 100 meters.

Power the Base Stations

Another aspect of base station planning is powering of the base stations. The various ways of powering and the requirements on the power supply are described in the Installing and operating IPBS on page 51.

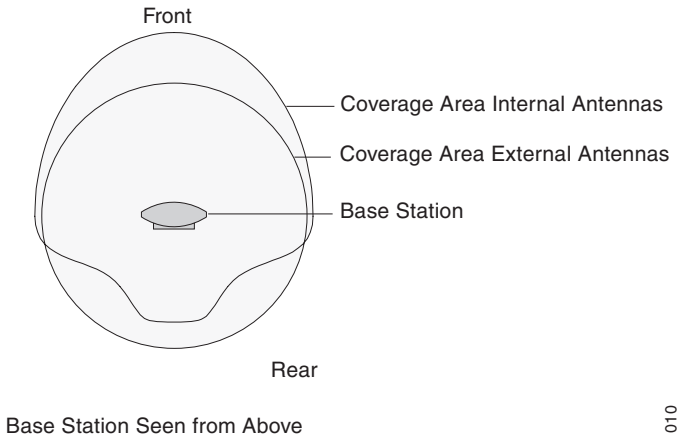
Antennas

This section describes the behaviour of the different types of antennas.

Internal and External Antennas

In an environment with much reflections (such as most office environments) there will not be much difference in coverage of the internal and external antennas. Some areas that are covered by the internal antennas will not be covered by the external and vice versa.In an environment with low reflections the somewhat directional behaviour (forward bias) of the internal antennas will be noticeable, see figure 11. It may be worth trying to place base stations horizontally in order to get more vertical coverage in for example stair wells.

Figure 11: Antenna pattern of the Internal and External Antennas



Directional Antennas

It is possible to use directional antennas in small corridors and halls. Give careful consideration to the type of antenna that you intend using for your application: why that antenna in particular? The fact is that there are many different types of antenna, all with a different radiation pattern. It is difficult to summarize the type of antenna and the application; it is often a question of experience and empiricism. It may be, for example, that you achieve the best result by mounting the base stations on the ceiling, allowing the antennas to radiate vertically downwards. It is possible that you need a beam that is very directional horizontally but has a wider radiation pattern vertically (for example, an extremely high hall), or precisely the opposite. It is advisable to consider this before carrying out the measurement, but the fact remains that you must always carry out a measurement to ensure the best possible operation.

Base Station Planning Tips

All information needed to do a solid base station planning are given in section Client's Requirements on page 34 to Location of the Base Stations on page 47. Below is a list of the most important issues:

- Always involve the client in the site survey. Ensure that the client shares the responsibility for the decision on the siting of base stations. Also always involve the client in problems which you encounter (a difficult area to cover), and ensure that the client is not faced with surprises afterwards.
- Discuss with the client whether the base stations are to be installed visibly or out of sight. If the client wants the base stations not to be visible, the possibility of installing the base stations with antennas pointing out of the ceiling should be considered. This is done to prevent a base station from being obstructed by ventilation ducts, metal panels on the ceiling or other obstacles. If this is not acceptable, ensure that the base station is placed in a way that disruption by the obstacles above the ceiling or behind walls is minimized.
- Pay particular attention to the 'non-standard' areas such as toilet rooms, stairwells, lifts, maintenance shafts etc.
- Always mount a base station at least 30 Communication Manager away from a metal wall, to avoid a substantial impedance change for the antennas.
- Always try to place the base station in a way that it can "see" as much as possible of the area to be covered.
- Locate the base stations such that it can 'see' as much as possible of the area to be covered or such that there are as few obstacles as possible between the base station and the area to be covered.
- Place the base station strategically: for example, do not place the base station on a large concrete pillar in the middle of a hall since this will result in bad coverage behind the pillar.
- To achieve outdoor coverage, mount a base station on a wall containing a window. Place the base station with its antennas in front of the window or in a way that the base station can see as much as possible of the outdoor area.
- Base stations should not be placed near the outer walls of the building as this reduces the effective covered area, except of course when outdoors coverage is desired.
- Always keep the necessary traffic capacity in mind during the site survey. How many people there are in a particular department, how often people call on average and how long people call on average. A standard rule of thumb for this ratio is one base station for 27 people. If you are dealing with, for example, a purchase department, the ratio will quickly change. Talk this over with the client.
- If you need to place two base stations close together separate them with at least 30 Communication Manager.

- Ensure that during the installation of a base station, the base station is given an extra length (5-10 metres) of cable because it is possible that it will have to be moved for one reason or another.

Making a Base Station Plan

Once the average cell size is found according to Determine the Average Cell Size on page 43, do the following:

1. Make a sketch of all base station positions on the ground plan.
2. Indicate the expected speech and air sync coverage for each base station on the map.
3. Verify with the site survey tool that the real speech coverage is as expected.
4. Verify with the site survey tool that the air sync coverage is as expected. Make sure that air sync coverage is sufficient even considered a worst case scenario, that is with all doors, windows etc. closed. See Installing and operating IPBS on page 51.
5. It is strongly recommended that each IPBS is able to synchronize with at least two other base stations.
6. Especially verify coverage in difficult areas such as lifts, stair houses and discontinuity in construction.
7. If weak areas are found, try if re-positioning base stations solves it, otherwise plan an extra base.
8. Select which IPBS should be assigned the role as master. The master should ideally be centrally located since it is often configured as air synchronization master. Make sure that the bandwidth between the master and the IP-PBX is sufficient.

Finalizing the plan

When all base station positions on the map are verified and the plan is found okay, discuss with the client whether, due to local traffic requirements extra base stations are needed in particular areas. In that case, integrate these base stations with the plan.

Thus a final base station planning is made and tested simultaneously.

Installing and operating IPBS

Introduction

This chapter describes how to install and operate the following equipment:

- IP-DECT Base Station (IPBS)

The chapter is intended as a guide for installation, troubleshooting and maintenance purposes and are relevant for the following personnel:

- System administrator
- Service technician

For information on the IP-DECT system, see System Description on page 17.

Description

This section gives a general description of the IP-DECT Base Station and DECT Base Station.

IP-DECT Base Station

The following versions of the IPBS are available:

- IPBS with Internal antenna
- IPBS with External antennas

IP-DECT Base Station with Internal Antenna

Figure 12: IPBS Overview

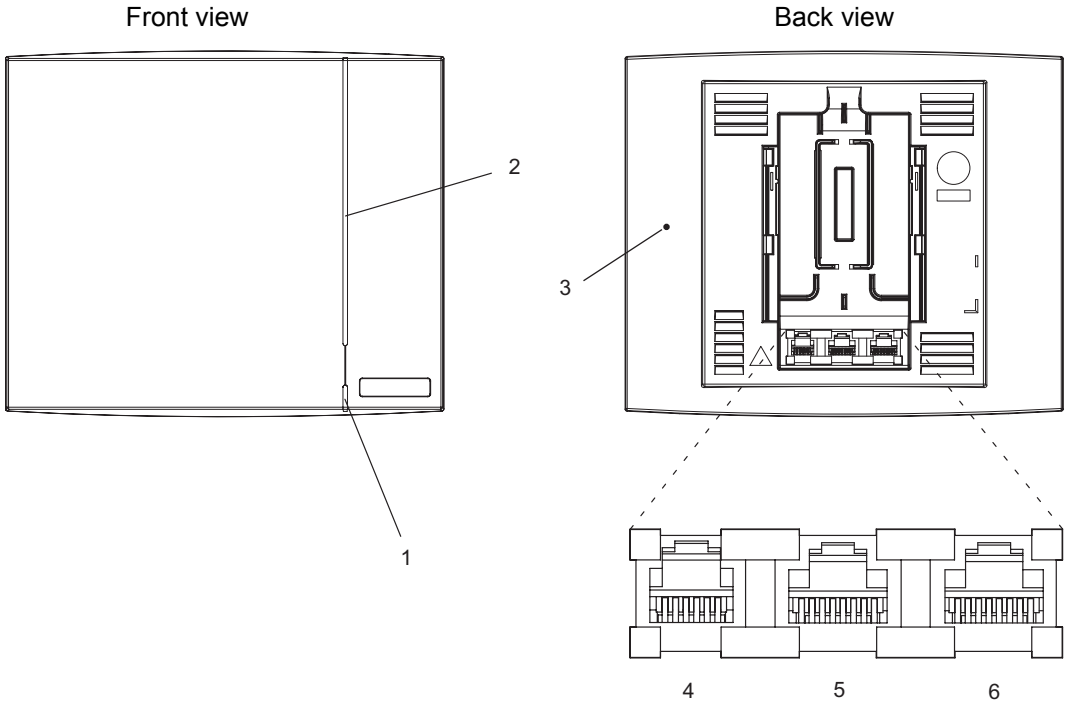


Figure notes:

1. LED 1
2. LED 2
3. Reset
4. Test (RJ12)
5. LAN (RJ45)
6. Power Supply (RJ45)

Contents of the Box

The box in which the IPBS is packed contains:

- An IPBS with integrated antennas
- A patch cable (approx. 1 m)
- A mounting bracket
- Two screws with wall plugs

Power Distribution

The IPBS can be powered using the following methods:

- Power over Ethernet, IEEE 802.3af
- A local AC-adapter

Note:

For more information about power distribution, see Power the Base Station on page 71.

Software

The software in the IPBS can be updated by downloading new software without disconnecting the equipment. The new software is stored in flash memory. See Update on page 129 for information.

Connectors

- One 8-pin RJ45 modular jack for LAN/PoE
- One 8-pin RJ45 modular jack for to connect external power supply
- A 6-pin RJ12 modular jack for factory testing

LEDs

Status of LED1 (lower LED)	**Description**
Steady Green	Operational
Quick flashing amber	Download of firmware in progress.
Steady Amber	TFTP mode
Alternating red/green	No Ethernet connection

Status of LED2 (upper LED)	**Description**
Not lit	IPBS operational and **no** traffic Air synchronization OK
Steady green	IPBS operational **and** traffic Air synchronization OK
Slow flashing green	Air synchronization OK and fully occupied with traffic
Flashing amber	Air synchronization inadequate and **no** traffic
Slow flashing amber	Air synchronization inadequate and fully occupied with traffic
Steady amber	Air synchronization inadequate and traffic
Flashing red	No air synchronization - searching for air sync candidates

Quick flashing red	Download of RFP software in progress
Flashing/steady amber (red/green)	The radio is switched off in the Master (a common setup for the Master) because of a missing air synchronization

Note:

All amber statuses are warnings that Air synchronization, although still adequate, is fading and might be lost. A flashing red indicates lost Air synchronization.

IP-DECT Base Station with External Antennas

The IPBS is available with two omni-directional external antennas. Other external antennas can be mounted as well. This section contains the differences between the IPBS with internal and external antennas. For all other information see IP-DECT Base Station with Internal Antenna on page 53.

Contents of the Box

The box in which the IPBS is packed contains:

- An IPBS for external antennas
- A patch cable (approx. 1 m)
- Two antennas
- A mounting bracket
- Two screws with wall plugs

Note:

The IPBS cannot be mounted with the antennas pointing downwards as the mounting bracket does not support it.

Insert the antennas into the IPBS before following the installation instructions in Install the Base Station on page 64.

AC-adapter

The AC-adapter is used to power a base station locally.

Note:

The maximum length of cable from adapter must not exceed 10 meters.

Versions (different type of mains plug)

700466436	DECT RBS POWER SUPPLY UK
700466444	DECT RBS POWER SUPPLY EU
700466451	DECT RBS POWER SUPPLY US
700466469	DECT RBS POWER SUPPLY AU

Safety Instructions

For safe and efficient operation, observe the guidelines given in this manual and all necessary sefety precautions. Follow the operating instructions and adhere to all warnings and safety precautions located on the product and this manual.

- Installation and service is to be performed by service persons only.
- Ensure that the voltage and frequency of the mains power socket matches the voltage and frequency inscribed on the equipment's electrical rating label.
- Never install telephone wiring during a thunderstorm.

Note:

Avoid touching or punching down the IPBS/RFP signal and power pairs as there is 48Vdc or 24Vdc present on these wires at all times.

- Always install the base station conforming to relevant national installation rules.
- Disconnect all power sources before servicing the equipment.
- Use only approved spare parts and accessories. The operation of non-approved parts cannot be guaranteed and may cause damage or danger.
- Only approved power supplies according to valid editions of EN/IEC/CSA/UL/AU/NZS 60950 are to be used when the IPBS/RFPs are powered by local power supplies.

Safety Symbols

For protection and to avoid damage to the IP-DECT system you will find stickers where applicable. The stickers have the following symbols and meaning:

Caution

Read and follow the safety rules and warning messages in this manual.
If the instructions are not followed, there is risk of damage to the equipment.

Caution ESD

Read and follow the handling instructions described in chapter ESD Handling on page 58.
Boards which contain Electrostatic Sensitive Devices (ESD) are indicated by this sign.
If the instructions are not followed, there is risk of damage to the equipment.

For handling these boards see Protection Against Electrostatic Discharge (ESD) on page 57.

Warning

Read and follow the safety rules and warning messages in this manual.
Hazardous voltages are present.
If the instructions are not followed, there is risk of electrical shock and danger to personal health.

Protection Against Electrostatic Discharge (ESD)

Integrated circuits are sensitive to ESD.To avoid damage caused by ESD, service engineers and other people must handle equipment and boards carefully.

Electronic equipment has become more resistive to ESD, but we see an increase of situations where static electricity can build up. This is caused by an increasing application of man–made fibres like nylon, acrylic, etc. which are capable of generating ESD of 10,000 Volts and more.

Walking across a nylon carpet, even for a few feet, could cause a person to be charged–up to more than 10,000 Volts.
Under these conditions, if a system board or a (C)MOS device is touched it could easily be damaged. Although the device may not be totally defective, it is often degraded, causing it to fail at a later date without apparent reason.

To make sure that equipment and parts are well protected during shipment, special packaging materials are utilized. System boards will be shipped in anti–static bags and (C)MOS devices and other sensitive parts in small shielded boxes.

ESD Handling

In the interest of quality and reliability, it is advisable to observe the following rules when handling system parts:

- Keep parts in their protective packaging until they are needed.
- When returning system parts like EEPROMS to the factory, use the protective packaging as described.
- Never underestimate the damaging power ESD can have and be especially careful when temperatures are below freezing point and during very warm weather in combination with low humidity. Make sure that the environmental conditions remain within the limits specified in the components' data sheets.

Important:
In the interest of quality and reliability system boards and other parts returned for exchange or credit may be refused if the proper protective packaging is omitted!

Safety Aspects

IP-DECT Base Station

The IP-DECT Base Station meets the valid editions of safety standard EN/IEC/CSA/UL/AU/NZS 60950-1. The system is a class III equipment for stationary wall mounting.

Regulatory Compliance Statements (EU/EFTA only)

Permission and Conformity

We, Avaya GmbH & Co. KG, declare that the product line Avaya IP-DECT concurs with the basic requirements and other relevant provisions of EU Directive 1999/5/EU concerning radio equipment and telecommunications terminal equipment and themutual recognition of their conformity.

Intended use

This equipment is intended for connection to radio interfaces (DECT) of Avaya PABX systems.

It is compliant with the essential requirements of the EU-Directive 1999/5/EU (Radio andTelekommunication Terminal Equipment, R&TTE).

Due to the differences of the individual public networks and network operators this compliance does not by itself give an unconditional assurance of successful operation at every network termination point. For the time being we are not aware of any network on which the equipment will not work due to its design.

In the event of problems, you should contact your equipment supplier or your Avaya service.

The conformity declaration can be accessed at the following Internet address:

www.avaya.de/gCommunication Manager/emea/de/includedcontent/conformity.htm

or search the index using the key term "Conformity".

CE.

Regulatory Compliance Statements (USA and Canada only)

FCC complience statements

The equipment have been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. The equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installtion. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna

• Increase the separation between the equipment and the receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/tv technician for help.

Information to user

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference recieved, including interference that may cause undesired operation.

IC Requirements for Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la Classe B conforme á la norme NMB-003 du Canada.

Modifications

Any modifications not expressly approved by Avaya could void the user's authority to operate the equipment.

Exposure to radio frequency signals

This device complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. The antenna used for this transmitter must be installed to provide a separation distance of at least 20 Communication Manager from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

IP Security

IP Security Terminology

SSL/TLS

Note:

Secure Socket Layer (SSL) has been renamed Transport Layer Security (TLS). TLS 1.0 is based on SSL 3.0/3.1. This document hereafter uses the term TLS.

TLS is a security mechanism based on cryptography (see *Cryptography*) and is used for encrypting communications between users and TLS-based Websites. The encryption prevents eavesdropping and tampering with any transmitted data.

TLS operates on the OSI Model Level 5 and uses PKI (see *Public Key Infrastructure*).

Public Key Infrastructure

Public Key Infrastructure (PKI) is a component of Public Key Chryptography (PKC) that uses:

- Public Key Certificates, see *Public Key Certificates (Digital Certificates)*
- Certificate Authorities, see *Certificate Authorities*

Public Key Certificates (Digital Certificates)

Public Key Certificates are used for key exchange and authentication. They are simply electronic documents (files) that incorporate a digital *signature* to bind together a *public key* with an *identity* (information such as the name or a person or organization, their address, and so forth).

The signature may be signed by a trusted entity called a Certificate Authority (CA), see *Certificate Authorities*.

The most common use of public key certificates is for TLS certificates (https websites).

Certificate Authorities

A Certificate Authority or Certification Authority (CA) is a trusted entity which issues public key certificates. The certificates contain a public key and the identity of the owner. The CA asserts that the public key belongs to the owner, so that users and relying parties can trust the information in the certificate.

Certificate Signing Request (CSR) or **Certification Request** is a message that is generated and sent to a CA in order to apply for a TLS certificate. Before the CSR is created a key pair is generated, the private key kept secret. The CSR will contain the corresponding public key and information identifying the applicant (such as distinguished name). The private key is not part of the CSR but is used to digitally sign the entire request. Other credentials may accompany the CSR.

If the request is successful, the CA will send back an identity certificate that has been digitally signed with the CA's private key.

A CSR is valid for the server where the certificate will be installed.

Cryptography

Cryptography is the encoding of messages to render them unreadable by anyone other than their intended recipient(s). Modern cryptography uses complex algorithms implemented on modern computer systems.

Cryptography tasks can be divided into the two general categories Encryption and Authenitication.

Encryption

Encryption is the scrambling of information so that the original message cannot be determined by unauthorized recipients by applying an *encryption algoritm* to the message *plaintext* producing *ciphertext* (appearently random bits). A *decryption algoritm*, if given the correct key, converts the ciphertext back into plaintext. Public key algoritms use paired keys, one for encryption and another for decryption.

Authentication

Authentication is the verification of a message's sender. This requires the message to be protected so it cannot be altered, usually by generating a *digital signature* formed by a hash of the message. Only the correct key can generate a valid signature.

Introduction to IP Security in IP-DECT

A secure system requires more planning than an unsecured system.

Secure Web Access (https)

For IP-DECT devices

- https access should be enabled
- http access should preferably be disabled

For more information see Configure the HTTP settings on page 95 .

TLS Certificates

Security in Web-based applications rely on cryptography. Cryptographical systems are only as secure as their *keys.* This makes *Key Management* a critical and often neglected concern. *TLS Certificates* have emerged as a clever way of managing large scale key distribution.

Certificate Handling Options

There are three certificate handling options:

1. Default Device certificate

   The default certificate is supplied with the device. It is is a self-signed certificate. Self-signed certificates provide only encryption, not authentication.

   For more information see Default Device Certificate on page 99.

2. Self-signed certificates

   This option is for customers not planning on having their certificates signed by public or private CAs. Self-signed certificates provide encryption but do in most cases not provide authentication.

   For more information see Self-signed Certificates on page 99.

3. Certificates signed by a Certificate Authority (CA).

   Two options are possible:

a. Certificates signed by the **customer's own CA**. Customers possessing the knowledge and intrastructure to house their own CA could build an internal enterprise CA, enabling them to sign (approve) their own certificate requests. This would make the customer a private CA.

b. Certificates signed by a **trusted public third party entity/organization**. There are only about a dozen issuers who have the authority to sign certificates for servers worldwide. An example is VeriSign. To use a public CA for certificate approvals the IP-DECT system would in most cases need to be connected to the Internet and hold a fully qualified domain name.

For more information see Certificate Signing Request (CSR) on page 101.

IP-DECT Administrative functions

Configuration - HTTP

The HTTP Tab is used to configure the type of web access that should be allowed for the device, includes a field for configuring https access.

For more information see Configure the HTTP settings on page 95.

Configuration - Certificates

The *Certificates* tab lists the certificate used by web browsers to authenticate the identity of the device (Web server).

For more information see Certificates on page 97.

Installation of the Base Station

This section describes how to install the IPBS. The base station can be fixed to a wall, a ceiling, a pole or a beam, by means of the mounting bracket included. When fixing the base station to a wall or ceiling the included plugs and screws must be used. When fixing it to a pole or beam a strap or a flexible metal band must be used, this is not included.

Note:

Fixing the base station to metal surfaces requires special consideration and is not recommended for several reasons. If this is unavoidable try to ensure a distance between the base station and the metal surface of, preferably, 1 meter. If this is not possible to achive the best option to use is a base station with internal antennas.

Base Station Cabling

If not using the wall outlet and the patch cable included in the box the recommended base station cable is a standard CAT5 unshielded ethernet cable with minimum 26 AWG copper conductors, this cable is also used for powering the base station. It is assumed that installation personnel know how to crimp RJ45 connectors to a cable.

Note:

Since the distance between the base station and the wall is limited, a RJ45 modular jack without cable retention must be used.

Note:

Ensure that during the installation of an base station, each base station is given an extra length (5-10 metres) of cable because it is possible that it will have to be moved for one reason or another.

Install the Base Station

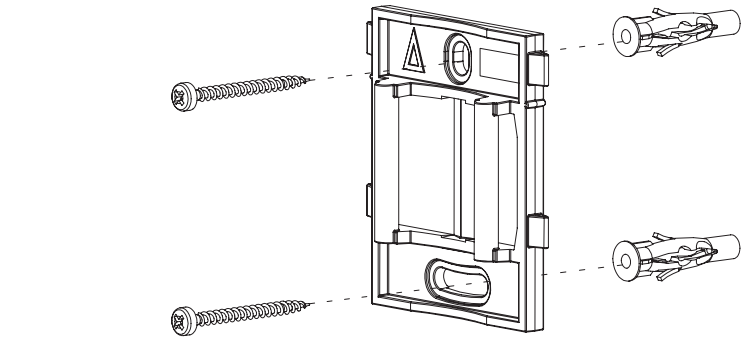
The base station can be mounted vertically or horizontally. Mount the base station at places and positions as determined in the base station plan, see Planning an IP- DECT System on page 31. The base station must be placed in a way that it is not facing large metal objects such as large heating pipes.

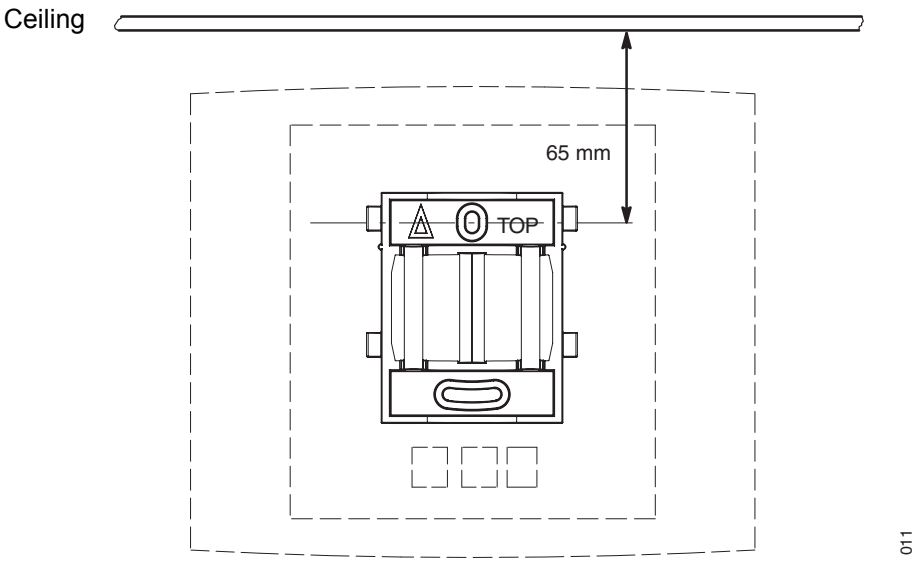
Fix the Mounting Bracket to a Wall

Fix the mounting bracket (see figure 13 on page 65) to the wall as follows:

1. Hold the mounting bracket with its flat side against the wall with the text ‘TOP’ upwards and mark the two holes. The minimum distance between the upper hole and the ceiling or any object above the base station must be at least 65 mm, see figure 13. If the distance is less than 65 mm, the base station cannot be slid onto the bracket.
2. When using wall plugs: Drill the two holes using a ∅ 6 mm drill and insert the included wall plugs.
3. Position the mounting bracket with its flat side to the wall and fasten it with the two included ∅ 3.5 mm screws.

Figure 13: Fixing the mounting bracket to a wall





Fix the Mounting Bracket to a Ceiling

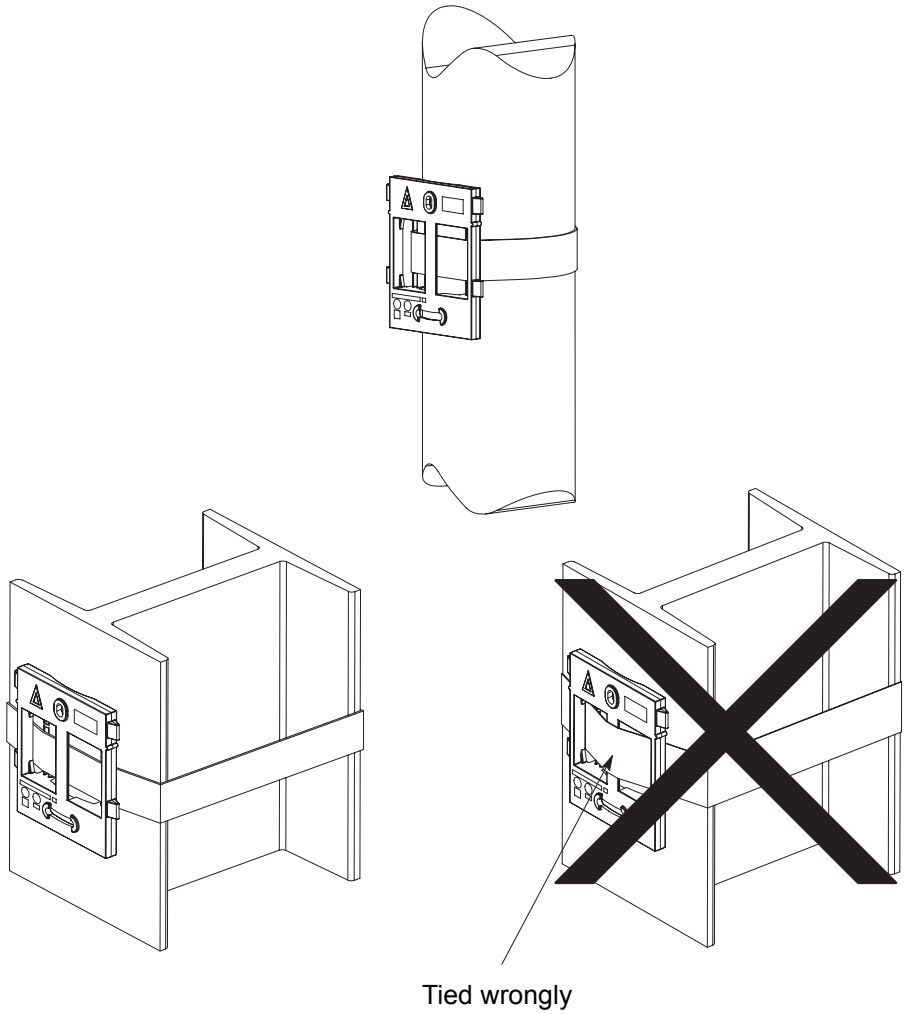
Fixing to a ceiling is done in the same way as the a wall, see *Fix the Mounting Bracket to a Wall*. When the base station has to be positioned above a suspended ceiling, make sure that the front of the base station points downwards.

Fix the Mounting Bracket to a Pole or Beam

The mounting bracket can be fixed to a pole (diameter ≥ 45 mm) or a beam (wider than 50 mm) by means of a strap or flexible metal band less than 30 mm wide. The strap or flexible metal band is not included in the box.

1. Fix the mounting bracket to a pole or beam using the metal band, see figure 14.

Figure 14: Fixing the mounting bracket to a pole or beam

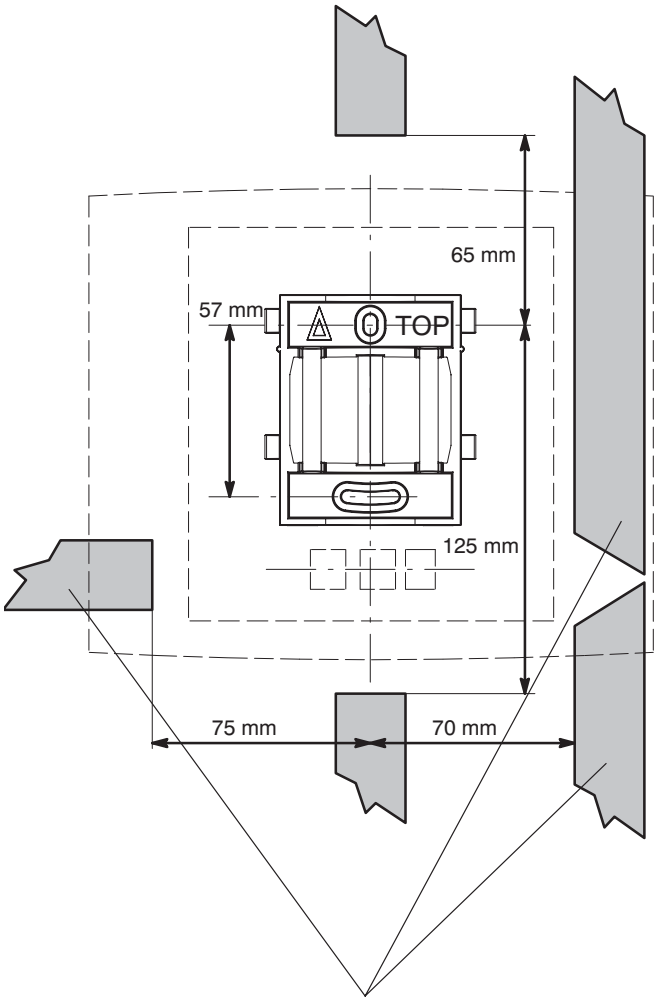


Use the Cable Ducts

When the base station is mounted to the wall, cable ducts can be used to route the wiring through.

1. Fix the cable duct to the wall in one of the positions shown in figure 15 on page 67.

Figure 15: Minimum distances between a cable duct and the mounting bracket



Secure the Cable

1. For safety reasons secure the base station cable to a convenient point at about 30 Communication Manager from the base station.

If for some reason the base station drops, it is secured by the cable.

Pinning

1. Cut the cable to the correct length and connect the cable to a RJ45 modular jack.
2. For information on the pinning of the data jack see the following:
   - IPBS, Pin the IPBS Cable on page 68.

   Do **not** plug the connector in the base station yet!

Note:

Since the distance between the base station and the wall is limited, a RJ45 modular jack without cable retention must be used.

Pin the IPBS Cable

Figure 16: Connector pinning of the LAN/PoE connector, power feed over the spare cable pairs.

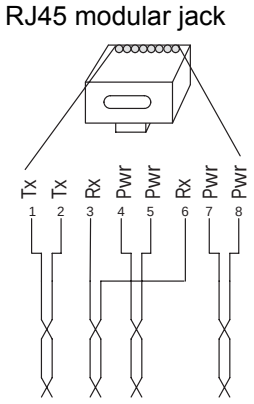


Figure notes:

Tx = Transmitter data pair

Rx = Receiver data pair

Pwr = Power pairs

Figure 17: Connector pinning of the LAN/PoE connector, power feed over the Rx/Tx data cable pairs.

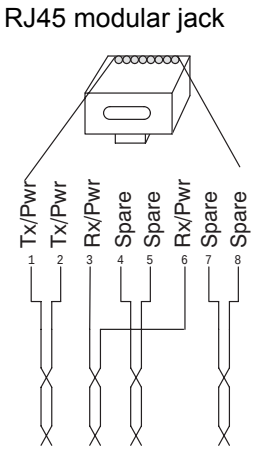


Figure notes:

Tx/Pwr = Transmitter & power pair

Rx = Receiver & power pair

NC = Not connected

Connect the Base Station Cables

1. If it is required that the cables enter the base station centrally from above, guide the cables through the recess in the middle of the base station as shown in figure 18 on page 70.

Figure 18: Cables entering centrally from above

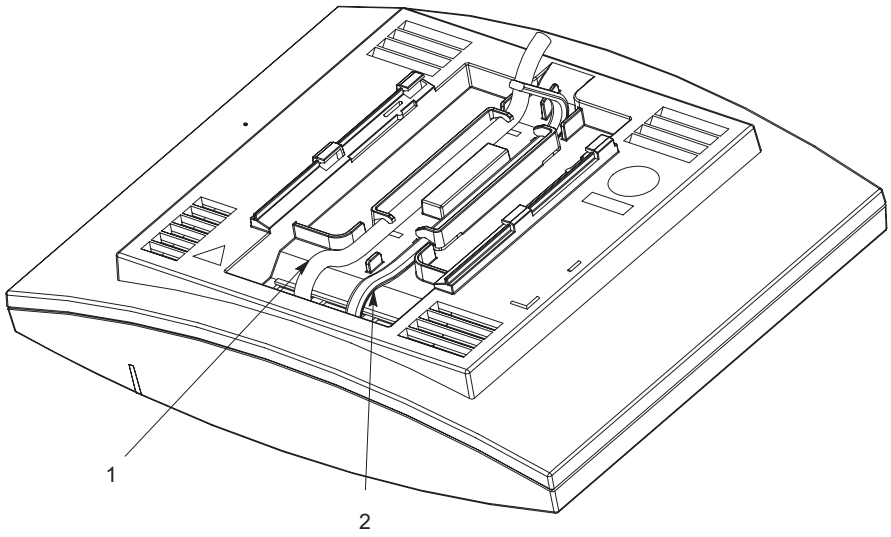


Figure notes:

1. Data cable

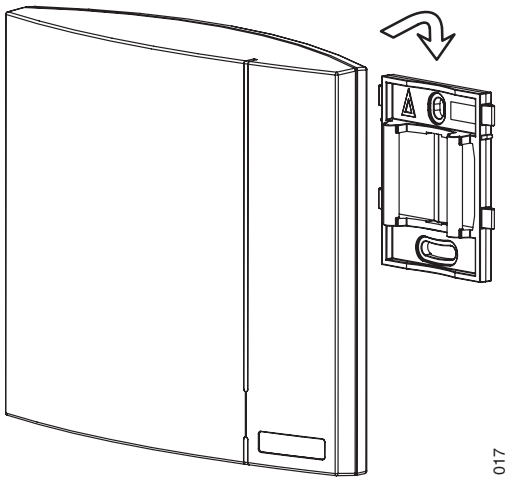
2. Power cable (if used)

2. Plug the modular jack of the data cable into one of the data/power connectors.
3. When an AC-adapter is used:
   - Plug the modular jack of the AC-adapter in one of the data/power connectors.
   - Plug the AC-adapter into a wall-outlet.

Mount the Base Station

1. Hold the base station flat against the mounting bracket and move it downwards until it clicks, see figure 19.

Figure 19: Mounting the base station



Power the Base Station

The base station is powered the following ways:

- Power over Ethernet (only IPBS).
- By a local power supply.

Note:

Do not power the base station using both power supplies. Parallel powering will not harm the base station but it can disturb the signalling.

Power the IPBS over Ethernet

The IPBS supports Power over Ethernet, IEEE 802.3af, class 2. The IPBS power consumption is maximum 5W. But according to the PoE standard for class 2 the PoE power source will allocate 7W to the IPBS. This must be regarded when planning the powering of the IPBSs so that the power limit of the PoE power source is not exceeded.

The PoE standard supports two ways of feeding the power:

1. Power over the Rx/Tx data pairs.
2. Power over the spare cable pairs.

Both power feed methods are supported in the IPBS, it is also insensitive to change of the polarity.

Power the Base Station with a Local Power Supply

Powering the base station with a local power supply can be done using the second data/power inlet on the base station. The base station can be powered individually by an AC-adapter. The AC-adapter is provided with an 8-pin RJ45 plug that can be plugged into the *Power Supply* jack. For specification see AC-adapter on page 55.

Note:

Only approved power supply according to valid editions of EN/IEC/CSA/UL/AU/NZS 60950 is to be used when the base station is powered by a local power supply.

Configuration

This section describes how to configure the IPBS using the web interface. The recommended order to configure the equipment in the IP-DECT system is as follows:

1. Configure the Master, see Configure the Master on page 82.
2. Configure the Standby Master, see Configure the Standby Master on page 83.
3. Configure the slaves/radios, see Configure the Slave/Radio on page 84.

Requirements

The following is required in order to configure the IP-DECT system:

- PC
- 10/100base-T Ethernet connection

Web Browser Requirements

To use the interface properly, the web browser has to meet the following requirements:

- HTTPS (TLS1)

  Note:
  The IPBS is using HTTPS (TLS 1.0) as default configuration. So TLS 1.0 needs to be selected in the menu **Extras** > **Internet properties** > **Advanced** of the Internet Explorer. TLS 1.0 is disabled by default in IE 6.0.

- HTTP 1.1 protocol
- HTML 4.0 protocol
- XML/XSL Version 1.0

The GUI has been tested with Internet Explorer 6.x, but can also be operated with other browsers in compliance with the requirements above.

Access the GUI

The GUI interface is accessed through a standard web browser. It is possible to use the name, ipbs-xx-xx-xx, where xx-xx-xx is the end of the MAC address.

It is also accessed by entering http://xxx.xxx.xxx.xxx in the browser address field. In this address, xxx.xxx.xxx.xxx should be replaced with the IP address determined in Determine the IP Address on page 74.

Access the GUI and change the default password as described in Change the Default Password on page 76.

Determine the IP Address

The factory setting of the DHCP mode for the LAN port is ***automatic***, at first power up it will act as a DHCP client. If the network has a DHCP server, it will assign an IP address to the IPBS. If there is no DHCP server in the network the IPBS can be assigned a predefined IP address.

Note:

After the first startup the DHCP mode should be changed from ***automatic*** to either ***client*** or ***off***, see Set DHCP Mode on page 102.

This section describes how to determine the dynamically allocated IP address. The address is used to access the IPBS using a web browser. Two methods are described:

- In a Network without a DHCP Server on page 74.
- In a Network with a DHCP Server on page 74.

In a Network without a DHCP Server

If the network does not have a DHCP server, and the DHCP mode is set to ***automatic*** (factory default), follow the steps below.

Note:

If the IPBS has been used before, it must be restored to factory default settings by performing a long hardware reset, see Reset Using the Reset Button on page 136.

1. Connect a ethernet cable between the IPBS and the computer. The computer Ethernet interface need to be configured for a fixed IP address in the range of 192.168.0.2 to 192.168.0.254.

   Note:

   For IPBS, a power adapter must be used.

2. Perform a hardware reset by shortly pressing the reset button.
3. The IPBS will be assigned the IP address 192.168.0.1 and the netmask 255.255.255.0.
4. Enter http://192.168.0.1 in the browser address field to access the IPBS GUI.
5. After the first startup the DHCP mode should be changed from ***automatic*** to either ***client*** or ***off***, see Set DHCP Mode on page 102.

In a Network with a DHCP Server

If the network has a DHCP server the IP address is determined following the steps below.

The IPBS MAC address can be found on the label on the box and on the label on the backside. The hexadecimal numbers (xx-xx-xx-xx-xx-xx) represent the MAC address.

Note:

In order to determine the IP address using this method it is necessary to have a PC with MS Windows. It must be connected to the same LAN (broadcast domain) as the IPBS.

Determine the IP address following the steps below:

Note:

If the IPBS has been used before, it must be restored to factory default settings by performing a long hardware reset, see Reset Using the Reset Button on page 136. Then remove the power supply cable and connect it again.

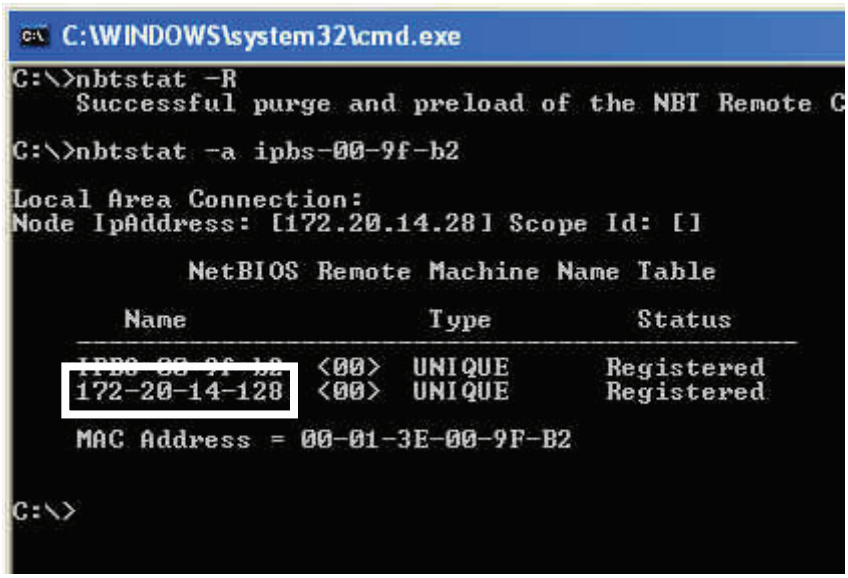
1. Open a command window in windows by selecting **Start** > **Run** and enter **`Communication Managerd`** in the **Open:** text field.
2. Enter the following commands:

   C:\ nbtstat -R

   C:\ nbtstat -a ipbs-xx-xx-xx

   Where xx-xx-xx should be replaced with the last 6 hexadecimal digits of the MAC-address.
3. The IP address is displayed in the command window, see the white frame in figure 20.

Figure 20: Determine the IP address



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4. Enter http://xxx.xxx.xxx.xxx (where xxx.xxx.xxx.xxx is the determined IP address) in the browser address field to access the GUI.
5. After the first startup of the IPBS the DHCP mode should be changed from ***automatic*** to either ***client*** or ***off***, see Set DHCP Mode on page 102.

Change the Default Password

1. Enter the IP address determined in *Determine the IP Address* in the web browser address field.
2. Select **General** > **Admin**.
3. Enter user name and password in the dialogue box.
   Default user name is: admin.
   Default password is: changeme.
4. Enter a user name in the **User Name** text field.
5. Enter a password in the **Password** text field. Repeat the password in the second text field.
6. Click **OK**.

GUI Web Access

Login Page

When accessing IPBS through a web browser the initial page is the login page. This page has two hyperlinks: **System Administration** and **User Administration**.

Note:
Logging out of the IPBS application is done by closing the Internet Explorer, to be completely logged out.

Access Levels

Three types of web users (or *Access Levels*) are authorized to access IPBS:

- Auditors
- User Administrators
- System Administrators

The different types of access levels are described in the following table.

Access Level	Authorization	Login hyperlink on login page [1]	Described in section
Auditors	• Read access to device parameter settings • Can generate Service Reports	System Administration	Auditors on page 77

User Administrators	• Add, update and remove users	User Administration	User Administrators on page 77
System Administrators	• Write access to all device parameter settings (for example IP addresses, software upgrades) • Assign and modify access to other System Administrator and User Administrator account settings • Add, update and remove users	System Administration	System Administrators on page 78

1. Different users should use the hyperlink related to their access level. The system does not allow login by a link not related to the user's access level.

Auditors

Auditors have read access to device parameter settings but are not authorized to update those settings. Auditors are also allowed to generate Service Reports (**Administration** > **Diagnostics** > **Service Reports**).

The login steps for an auditor follow the steps of a normal system administrator login. See System Administrators on page 78 for more information.

User Administrators

IPBS is not supplied with preinstalled user administration accounts. Therefore, the first user administration account must be created by a system administrator (see System Administrators on page 78). If additional user administration accounts are needed they must also be created by a system administrator. Refer to Managing User Administrators on page 81 for more information.

User administrators can only administer users. They can view but not create or manage other user administrator accounts.

Login as User Administrator

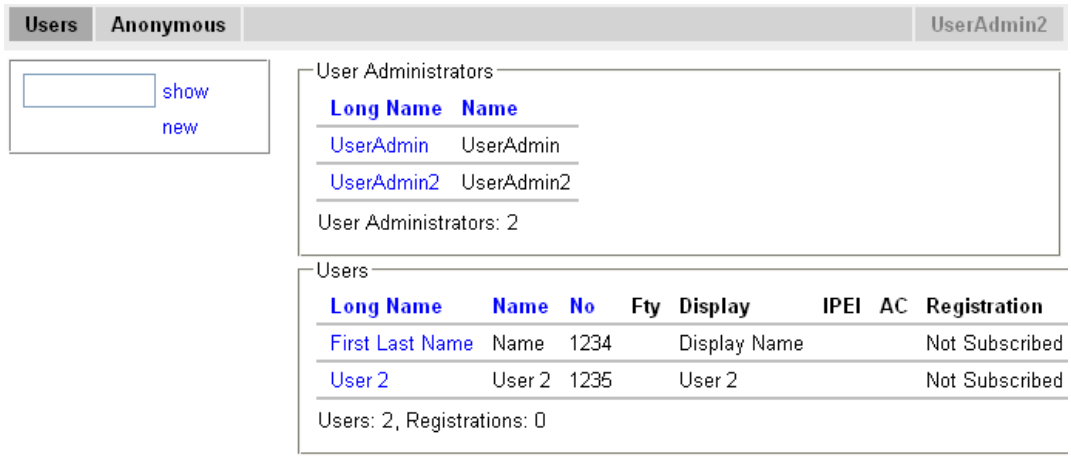
To login as a user administrator:

1. Follow Access the GUI on page 73 and access the device using a web browser.
2. Click the link labelled **User Administration**.
   A login window is opened.
3. Enter user name and password for a user administrator.
4. Click **OK** to login.
5. Click the show link.

6. The User Administration page is displayed.

   See the figure below for a sample.

Figure 21: User Administration Page Sample



The right side of the page consists of two list sections:

- **User Administrators** in the upper right section.

  Note:

  This section is read-only since a user administrator cannot manage other user administrators. See Managing User Administrators on page 81.

- **Users** in the lower right section. Refer to Add Users on page 87.

System Administrators

IPBS devices are factory delived with a default system administrator account.

Login as System Administrator

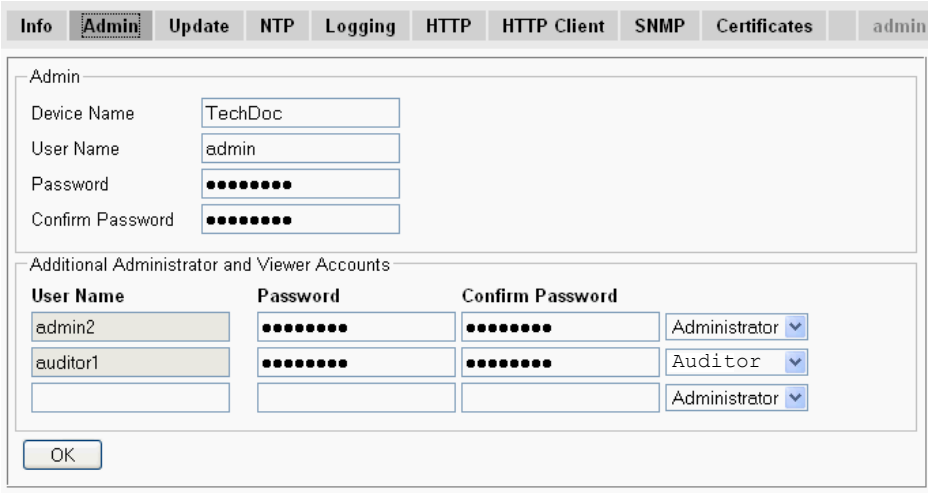
To login as a system administrator:

1. Follow Access the GUI on page 73 and access the device using a web browser.
2. Click the link labelled **System Administration**.

   A login window is opened.
3. Enter user name and password for a system administrator.
4. Click **OK** to login.
5. Click on the **Admin** tab.

   The Administration page is displayed. See the figure below for a sample

Figure 22: System Administrator Admin Page



This page is used for the following tasks.

- Managing the default System Administrator account, see Admin Section on page 79.
- Managing additional System Administrator accounts, see Additional Administrator Accounts on page 80.

Admin Section

The **Admin** section (the upper part of the page) displays the default System Administrator account. This account can be modified (see the following section) but cannot be deleted.

Modify Admin Account

1. Login as system administrator (see Login as System Administrator on page 78).
2. Select **Configuration** > **General** > **Admin**.
3. Select/Enter the following settings:

Field name	Description
• Device Name	Enter a description for the device.
• User Name	Enter a login user name.
• Password	Enter a password.
• Confirm Password	Confirm the password.

Note:

Only changing the password will not result in the settings being saved. For the settings to be saved, both user name and password must be updated at the same time!

4. Click **OK**.

Additional Administrator Accounts

The **Additional Administrator Account** section (the lower part of the page) displays a list of existing additional system administrator accounts.

Create An Additional Account

To create an additional administrator account do the following:

1. Login as system administrator (see Login as System Administrator on page 78).
2. Select **Configuration** > **General** > **Admin**.
3. On the next free account row:
   - Enter User Name
   - Enter Password
   - Enter Password again
   - Select **Administrator** (for System Administrator) or **Auditor** in the drop-down list (See Access Levels on page 76 for a description of access levels.)
4. Click **OK**.

   The account row is created.

Modify An Additional Account

To modify an additional administrator account do the following:

1. Login as system administrator (see Login as System Administrator on page 78).
2. Select **Configuration** > **General** > **Admin**.
3. On an existing account row:
   - Enter a new user name
   - Enter a new password
   - Enter the password again
   - Select **Administrator** (for System Administrator) or **Auditor** in the drop-down list (See Access Levels on page 76 for a description of access levels.)
4. Click **OK**.

   The account row is updated.

Delete An Additional Account

To delete an additional administrator account do the following:

1. Login as system administrator (see Login as System Administrator on page 78).

2. Select **Configuration** > **General** > **Admin**.
3. On the row to be deleted, select the **Delete** check box.
4. Click **OK**.

   The account row is deleted.

Managing User Administrators

Create a User Administrator

IPBS is not supplied with preinstalled user administration accounts. Therefore, the first user administration account must be created by a system administrator. If additional user administration accounts are needed they must also be created by a system administrator.

1. Login as System Administrator (see Login as System Administrator on page 78).
2. Select **Administration** > **Users**.
3. Click on **show**.

   The User Administration page (see User Administration Page Sample on page 78 for a sample) is displayed.
4. Click the **new** hyperlink. A window is opened.
5. Select the **User Administrator** radio box. The window layout transforms.
6. Enter a long name.
7. Enter a name.

Note:
This field is used for login.

8. Enter a password.
9. Confirm the password.
10. Click **OK**.

View and Modify a User Administrator

1. Login as System Administrator (see Login as System Administrator on page 78).
2. Select **Administration** > **Users**.
3. Click on **show**.

   A two-part list page is displayed. At the top are the user administrator accounts and below the user administrators are the user accounts.
4. In the **User Administrators** section, click on a hyperlink below the **Long Name** heading. A detail window is opened.
5. Select/Edit any of the following settings:
   - Long Name

- Name

Note:

This field is used for login.

- Password
- Confirm Password

6. Click **OK**.

Delete a User Administrator

1. Login as System Administrator (see Login as System Administrator on page 78).
2. Select **Administration** > **Users**.
3. Click on **show**.
4. In the **User Administrators** section, click on a hyperlink below the **Long Name** heading. A detail window details for is opened.
5. Click on **Delete**.

   The User Administrator is deleted and the windows is closed.

Configure the Master

This section describes how to configure the Master. Each configuration step is briefly described in the step list below. For more detailed information see the corresponding subsection in Operation on page 90.

1. Determine the address and access the GUI, see Access the GUI on page 73.
2. Change the default password, see Change the Default Password on page 76.
3. Configure LDAP user name and password, mark the *Write Access* check box, see Configure LDAP Server on page 106.
4. Set a static IP address and set DHCP to off, see Set a Static IP Address on page 103.
5. Set the mode to Master, see Select Mode on page 113.
6. Perform a reset to restart the IPBS in Master mode, see Reset on page 135.
7. Select **DECT** > **System** and enter password.
8. Select system name and password, see Change System Name and Password on page 110.
9. Set default language, see Set Default Language on page 111.
10. Select supplementary services, see Configure Supplementary Services on page 113.
11. Set frequency band, see Set Frequency Band on page 111.

12. Configure the Master ID, see Configure Master ID on page 114.
13. Select PBX, see Configure IP-PBX on page 114.
14. Set the Master IP address to 127.0.0.1, see Enter IP Address to the Pari Master on page 117.
15. Perform a reset to restart the IPBS in Master mode, see Reset on page 135.

    If problem to access the Master from a certain PC after the reset;

    - Open a command window in windows by selecting **Start** > **Run** and enter **`Communication Managerd`** in the **Open:** text field.
    - Enter the following commands

      arp -d (Delete the *arp* cache)

      nbtstat -R (Empty the *nbtstat* cache)
    - Restart the WEB browser.
16. Select supplementary services, see Configure Supplementary Services on page 113.
17. Assign PARI, see PARI on page 118.
18. Enter SARI, see SARI on page 118.
19. Enter AIWS IP address, see Configure Messaging on page 122, Device Management on page 123 and Configure the Location on page 123.
20. Configure air synchronization, see Configure Air Synchronization on page 119.
21. Enter the Time Server address, see Configure the NTP Settings on page 92.
22. Reset in order to make the configuration changes take effect, see Reset on page 135.

Configure the Standby Master

It is recommended to have a Standby Master in the IP-DECT system. This section describes how to configure a Standby Master. Each configuration step is briefly described in the step list below, for more detailed information see the corresponding subsection in Operation on page 90.

Note:

Make or change configuration of the Standby Master only when the Master is running.

1. Determine the address and access the GUI, see Access the GUI on page 73.
2. Change the default password, see Change the Default Password on page 76.
3. Configure LDAP replicator, enter the IP address, user name and password to the LDAP server. Alternative LDAP server must not be entered. Select the Enable check box, see Configure LDAP Replicator on page 107.
4. Set a static IP address and set DHCP to off, see Set a Static IP Address on page 103.

5. Enter system name and password, this should be the same system name and password as in the Master. See Change System Name and Password on page 110.
6. Enter Primary Master IP Address.
7. Set the mode to Standby Master, see Select Mode on page 113.
8. Configure the Master ID, see Configure Master ID on page 114.
9. Select PBX, see Configure IP-PBX on page 114.
10. Enter Master IP address, see Enter IP Address to the Pari Master on page 117.
11. Select supplementary services, see Configure Supplementary Services on page 113.
12. Assign PARI, see PARI on page 118.
13. Configure air synchronization, see Configure Air Synchronization on page 119.
14. Enter AIWS IP address, see Configure Messaging on page 122, Device Management on page 123 and Configure the Location on page 123.
15. Enter the Time Server address, see Configure the NTP Settings on page 92.
16. Configure the LDAP replicator, enter the IP address, user name and password to the LDAP server. Write access is required for the Standby Master replication. New users in the IP-DECT system need to be created on the IPBS Master holding the database even if the LDAP write is configured for the Standby Master. Alternative LDAP server must not be entered. Check the **Enable** check box, see Configure LDAP Replicator on page 107.
17. Enter AIWS IP address, see Configure Messaging on page 122, Device Management on page 123 and Configure the Location on page 123.
18. Reset in order to make the configuration changes take effect, see Reset on page 135.

    If problem to access the Standby Master from a certain PC after the reset;

    - Open a command window in windows by selecting **Start** > **Run** and enter **`Communication Managerd`** in the **Open:** text field.
    - Enter the following commands

      arp -d (Delete the *arp* cache)

      nbtstat -R (Empty the *nbtstat* cache)
    - Restart the WEB browser.

Configure the Slave/Radio

This section describes how to configure the Slave. Each configuration step is briefly described in the step list below, for more detailed information see the corresponding subsection in Operation on page 90.

Note:

When one slave is configured, the configuration can be saved and uploaded to the other slaves in the system.

1. Determine the address and access the GUI, see Access the GUI on page 73.
2. Change the default password, see Change the Default Password on page 76.
3. Set DHCP mode to **Client**, see Dynamic IP address via DHCP on page 103.

   If the radio acts as a Standby Master, perform the following: Configure LDAP replicator, enter the IP address, user name and password to the LDAP server and the alternative LDAP server is not required. Read only access is sufficient for the Standby Master. Check the **Enable** check box, see Configure LDAP Replicator on page 107. For normal radios LDAP replication is not recommended.
4. Set the mode to Slave, see Select Mode on page 113.
5. Enter the system name, the password and the Master and Standby Master IP addresses in the **DECT** > **Radio** tab, see Enter Enter IP Address to the Pari Master on page 117. This must be the same system name and password as set in the Master, see Change System Name and Password on page 110.
6. Configure air synchronization, see Configure Air Synchronization on page 119.
7. Enter the Time Server address, see Configure the NTP Settings on page 92.
8. Reset in order to make the configuration changes take effect, see Reset on page 135.
9. Save the configuration of the Slave, see Backup on page 129.

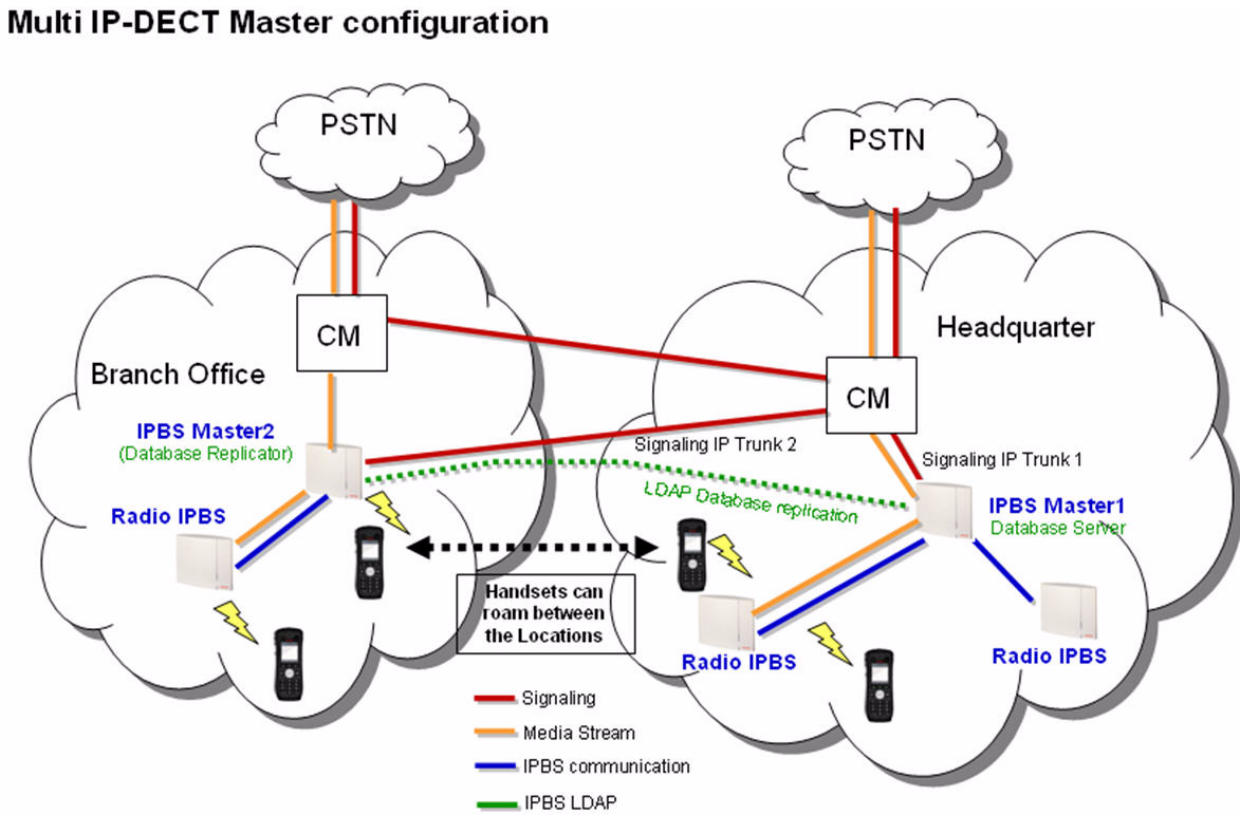
Configure the rest of the IPBS following the steps below:

Note:

Uploading the same configuration to all slaves can only be done if the DHCP is set to client.

10. Determine the address.
11. Select **Update** > **Config** and browse to the previously saved configuration. Click **OK**.
12. Reset in order to make the configuration changes take effect, see Reset on page 135.
13. Repeat step 10 to 12 for all Slaves.

Multi Base Station Master Configuration



This is a common scenario at a customer with multiple offices running one common IP-DECT system. It is recommended to have one IPBS Master at each location (coverage area). The coverage areas of different locations must not overlap. The IPBS Master1 in the main location holds the DECT database including the system information data as System name, password, SARI and user subscription data. The IPBS Master1 is the LDAP server of the IP-DECT system. The IPBS Master2 is a LDAP Replicator of the DECT database. It is recommended to grant write access to the LDAP database for the IPBS Master2 LDAP Replicator. Otherwise, roaming between the locations will not be possible. The write access is also required to be able to subscribe handsets and modify user data in the Branch office. New users can only be created on the database server IPBS Master1 in the Main Location.

Roaming between the different locations is possible for all the handsets. Remember handover will not be possible between the two locations if you have overlapping coverage areas. Handover is only possible within the same IPBS Master.

Beside other basic configuration for the IPBS Master the following steps are recommended for a Multi Base Station Master system:

On IPBS Master1:

- In **LDAP > Server** tab, create user with write access.

On IPBS Master2:

- In **DECT > System**, use same System name, Password, Subscription and Authentication settings as in IPBS Master 1 to get a common system.
- In **DECT > Radio**, use the same system name as in the DECT System.
- In **DECT > Master**, configure an individual Master ID for each IPBS Master in the range of 0 and 250. It is recommended to use Master ID “0” for IPBS Master1, which is the LDAP server of the IP-DECT system. All further IPBS Masters doing the LDAP replication should use a Master ID from 1 to 250. A standby Master needs to use the same Master ID as the corresponding IPBS Master.
- In **DECT > SARI**, do not configure any value. The SARI is part of the IP-DECT database and will be configured automatically when the LDAP replication will be enabled. The same SARI value has to be used in each IPBS Master that is part of the common DECT system.

  Important:
  Using a different SARI value will cause invalid subscriptions for all the subscribed devices. Changing the SARI in one of the IPBS Masters will change the SARI on all other IPBS Masters using the same LDAP database as well.
- In **DECT > PARI**, you can use the same PARI value as used in IPBS Master1 if you do not have an overlapping Coverage area of the two locations. If you have an overlapping coverage area of both locations, you need to use different PARI values.
- In **LDAP > Replicator**, enable replication of the IPBS Master1, use the user with write access.

Add Users

This section describes how to add users to the IP-DECT system. There are two ways to register cordless telephones:

- Using the telephone to automatically associate the IPEI number to a user, see Anonymous Registration on page 88.
- Entering the IPEI number of the telephone manually, see Individual Registration on page 89.

  The PARK to subscribe the DECT handsets can be found on the user page of the IPBS Master web interface. To subscribe other DECT GAP/CAP devices, use the PARK for the third party devices.

Note:
Telephones cannot be subscripted on a base station that is busy with 8 active calls. Subscription will fail in this case due to system limitations. Change to another base station or wait until a call has ended.

Anonymous Registration

The IPEI, which is the unique identification number of the telephone, can be assigned automatically to a user. This is used to avoid having to enter the IPEI number manually.

Add users in the IP-DECT System

1. Under the Administration menu, select Users.
2. Click **New**.
3. Enter the following information in the corresponding text fields, leave the **IPEI** and the **Auth. Code** text fields empty:
   - Long Name - The name of the user, need to be unique throughout the system. This is the name presented in a called party´s display, unless this is configured in the IP-PBX.
   - Display Name - Will be showed in the telephone display when the phone is idle.
   - Number - The phone number extension, need to be unique throughout the system.
   - IPEI/IPDI - needs to be empty for anonymous registration.
   - Auth. Code - the authentication code needs to be empty for anonymous registration, so the System Authentication code will be used for the telephone subscription.
4. Click **OK**.
5. Repeat step 2 to 4 for all users.

Assign Cordless Telephones to Users

1. Select **DECT** > **System**.
2. Enable anonymous registration by selecting **With System AC** in the **Subscriptions** drop-down list.
3. Click **OK**.
4. Perform an "over air subscription" using the system Authentication Code. For information on how this is done, see the reference guide of the telephone.
   The telephones' IPEI/IPDI number appears in the Anonymous list. To view the list: Select **Users > Anonymous**.
5. Assign the Portable Device to any user, subscribed or unsubscribed, on any Master defined in the system. To do it, go off hook and dial the desired Master ID, extension and optional individual AC code and then hang up. The master ID can be found on the Users page of the IPBS or in **DECT** > **Master**. You will need to use the Master ID of the currently connected IPBS master in a Multi Base Station Master scenario.

   Example where 0 is the Master id, 200 is the extension and 1234 is the AC code: *0*200*1234#.

Note:

When using AC code, start with the "*" character and end with the "#" character. Otherwise, skip the *# characters. If the user is already assigned to a Portable Device, it will be moved to the anonymous list when logging in a new Portable Device. It is recommended to go off hook as the first step. When dialling the login or logoff sequence in on hook mode and pressing off hook at the end of the sequence, the dialled digits will be added to the call list. Therefore, the individual AC can be found in clear text as well.

6. Repeat step 4 to 6 for all telephones.
7. Under the Configuration menu, select **DECT > System**.
8. Disable anonymous registration by selecting **Disable** in the **Subscription** drop-down list.
9. Click **OK**.

Individual Registration

1. Select **Users**.
2. Click **New**.
3. Enter the following information in the corresponding text fields:
   - Long Name - The name of the user, need to be unique throughout the system. This is the name presented in a called party's display, unless this is configured in the IP-PBX.
   - Display Name - Will be showed in the telephone display when the phone is idle.
   - Number - The phone number extension, need to be unique throughout the system.
   - IPEI/IPDI - The unique identification number of the telephone.
   - Auth. Code - The individual authentication code for this user used for the telephone subscription.
4. Perform an "over air subscription" using the individual authentication code. For information on how this is done, see the reference guide of the telephone.
5. Click **OK**.

Logout/Login Users

This section describes how to logout and login users to the IP-DECT system. For example, when using a shared Portable Device for shift workers.

Logout Users

Logout the Portable Device for any subscribed user in the system by calling the supplementary services feature for logout (see 7.5.8 Configure Supplementary Services on page 52) & optional individual AC code and hang up.

Example where #11*$# is the feature for logout and 1234 is the AC code: #11*1234#.

Login Users

To login a user, see Assign Cordless Telephones to Users on page 88.

Operation

This section describes the settings in the Configuration and Administration menu, each subsection represents a sub menu to the Configuration and Administration menu.

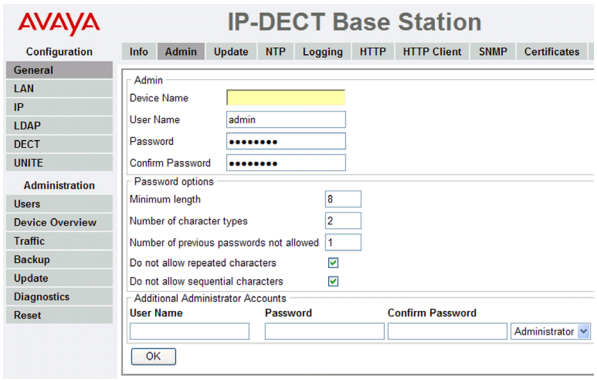
Some changes require a reset in order to take effect. It is possible to do several changes before resetting the IPBS.

General

This section describes how to do the following configurations and settings.

- Change User Name and Password
- Name the equipment
- Configure automatic firmware update
- Configure the NTP settings
- Configure Logging
- Configure the HTTP settings

Figure 23: Assigning a name, username, and password.



Change User Name and Password

The user name and password is used to access the IPBS through the web GUI.

1. Select **General** > **Admin**.
2. Write a user name in the **User Name** text field.
3. Enter a new password in the **Password** text field. Repeat the password in the second text field.
4. Click **OK**.

Name the IPBS

Each IPBS can be assigned a name. It is recommended to assign a descriptive name for example IPBS location.

1. Select **General** > **Admin**.
2. Enter a name in the **Device Name** text field.
3. Click **OK**.

Configure Automatic Firmware Update

The IPBS can be configured to automatically update its firmware. A script file must be uploaded to a suitable directory on an internal web server. For information on the script file syntax, see How to Use the Update Server on page 139.

1. Select **General** > **Update**
2. Enter the URL of the script file in the **URL** text field.
3. Enter the poll interval, in minutes, in the **Interval (min)** text field
4. Click **OK**.

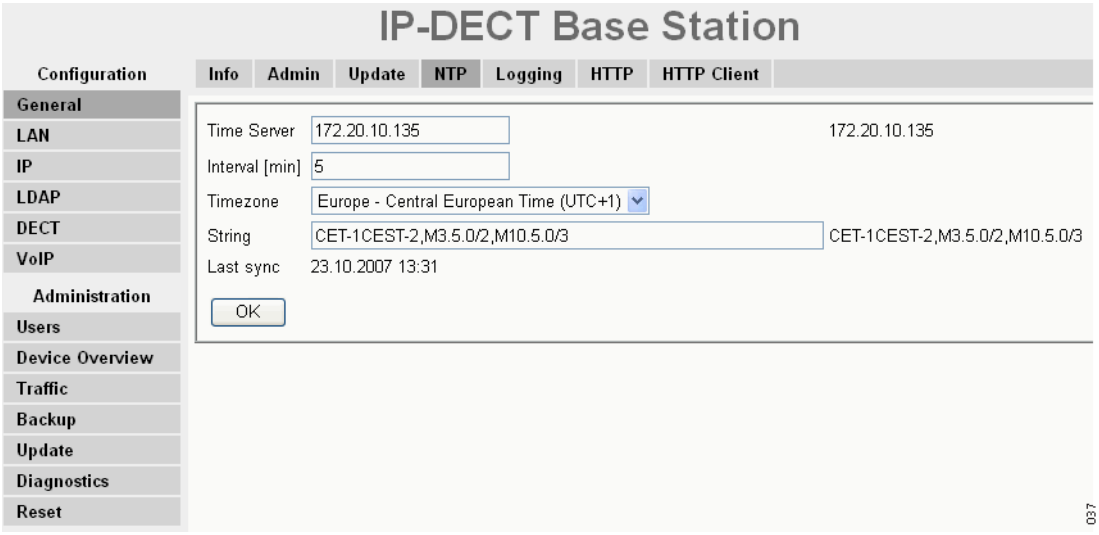
The **Current Update Serials** section shows the values of the variables set after the last execution of the associated command.

Configure the NTP Settings

Since the IPBS does not have a battery-backed real-time clock, the internal time will be set to 0:00 hrs, 1.1.1970 in the case of a restart.

In order to get the correct time in the system, specify the IP address of a NTP time server. The IPBS will synchronize its internal clock to the time server at startup and at the specified intervals. The clock is, for example, used by the telephones and log files.

Figure 24: Configure NTP settings



1. Select **General** > **NTP**.
2. Enter the IP address to the NTP server.
3. Enter a time interval in the **Interval (min)** text field.
4. Select time zone in **Time zone** drop-down list. If the desired time zone is not in the list, select **Other** and edit the **String** text field following the instructions in the next step.
5. Enter the timezone string if automatically updates summer/winter is desired.

   <String = StdOffset [Dst[SecondOffset], Date/Time, Date/Time]>

   - Std = Name of time zone, can be freely defined. Allowed characters: a-z, A-Z. No numbers, blanks or special characters allowed (for example EST for Eastern Standard Time)
   - Offset = time difference between the timezone and the UTC (Universal Time Coordinator).

- *Example 1:* Eastern Standard Time (EST) is 5 hours behind UTC (EST=UTC-5). You have to input the difference between your timezone and UTC, i.e. in this case plus 5 (UTC=EST+5), but wihtout the „+“ sign: "EST5“.
- *Example 2:* Use format hh:mm for timezones without full hours difference to UTC (e.g. for Indian Standard Time (IST=UTC+5:30) enter " -5:30" (UTC=IST-5:30).

- Dst = Name of summertime zone (for example EDT for Eastern Daylight Time).
- Second Offset = time difference between the summer time and the UTC.
- Date/ Time, Date/ Time = beginning and end of summertime.
  - date format = Mm.n.d (d day of n week in the m month)
  - time format = hh:mm:ss in 24-hour format.

Note that a week always starts on a Sunday and the number for Sunday is 0.

Example 1:
North Carolina is located in the Eastern Time Zone. Eastern Standard Time (EST) is 5 hours behind UTC (StdOffset = EST5), the Eastern Daylight Time (EDT) is 4 hours behind UTC (DstOffset = EDT4). Summertime for the year 2006 begins at two o’clock, on a Sunday, the first week in April (M4.1.0/2). The summertime ends at two o’clock, on a Sunday, the fifth week in October (M10.5.0/2).

<String = EST5EDT4,M4.1.0/2,M10.5.0/2>

Example 2:
Indian Standard Time (IST) is 5:30 hours ahead UTC (StdOffset = IST-5:30). India has no daylight saving time:

<String = IST-5:30>

6. Click **OK**.

Note:

If this value is removed or changed, it takes up to 24 hours until this is reflected in the cordless telephone. Switching a cordless telephone off and on the changes will take effect immediately.

Configure Logging

There are three ways to collect logs, see the table below.

TCP	The syslog entries are transmitted using a TCP connection.
SYSLOG	The entries are reported to a "syslogd" server in the network, which is responsible for further evaluation or storage of the entries.
HTTP	The syslog entries are transferred to a web server where they can be further processed. Each individual syslog entry is transmitted as form data to the web server in HTTP GET format.

Store the Syslog Entries using a TCP Connection

1. Select **General** > **Logging**
2. Select **TCP** in the **Type** drop-down list.
3. Enter the **IP address** of the logging server in the **Address** text field.
4. Enter the **Port** of the logging server in the **Port** text field.
5. Click **OK**.

Store the Syslog Entries in a Syslogd

1. Select **General** > **Logging**.
2. Select **SYSLOG** in the **Type** drop-down list.
3. Enter the **IP address** of the syslogd in the **Address** text field.
4. Enter the desired syslogd message class in the **Class** text field.
5. Click **OK**.

Store the Syslog Entries on a Web Server

1. Select **General** > **Logging**.
2. Select **HTTP** in the **Type** drop-down list.
3. Enter the **IP address** in the **Address** text field.
4. Enter the "relative URL of the form programme" on your web server in the **Path** text field.
5. Click **OK**.

Note:

The IPBS will make an *HTTP GET* request to the web server on the registered URL followed by the URL-encoded log entry.

Example:

Enter the value **`/cdr/ cdrwrite.asp`** in the **URL-Path** field if a page is on the web server with the name **`/cdr/cdrwrite.asp`** with a form that expects the log message in the ***`msg`*** parameter. In this example, the IPBS will make a *GET* **`/cdr/cdrwrite.asp?event=syslog&msg=logmsg`** request to the server.

Forward Alarms and Events

It is possible to forward alarms and events to an external server destination.

1. Select **General** > **Logging**.
2. Enter the IP Address of the IPBS where you want to have an overview of all faults in the **External HTTP Server Address** text field.

Enter the HTTP server port in the **External HTTP Server Port** text field. The default value is 80.

Configure the HTTP settings

Traditionally IPBS has been administered over the network via the http protocol (default port 80).

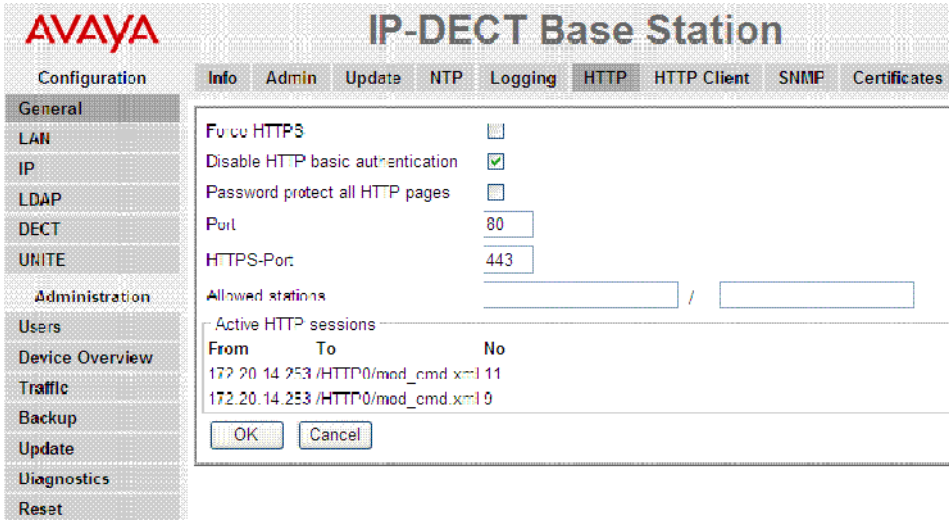
In a secure system (recommended; see the IP Security chapter) IPBS should be administered via the https protocol (default port 443). If for some reason port 443 is not to be used, you can use another port for the local https server and then access the IPBS via this port.

Http and https traffic, respectively, would be disabled if their port values were to be set to zero (0). Therefore:

- To disable http traffic set **Port** to 0 (which is recommended in a secure system). Attempts to contact the device using the http protocol will result in an *Unable to connect* message.
- To disable https traffic set **HTTPS Port** to 0 (not recommended).

Any other port values would enable http and https traffic, respectively, for the port specified.

Figure 25: Configure the HTTP settings



1. Select **General** > **HTTP**
   - Select the **Force HTTPS** check box to allow only HTTPS sessions and all HTTP requests are redirected as HTTPS requests.
   - Select the **Disable HTTP basic authentication** check box to require all administrative and programmatic clients to support HTTP digest authentication.
   - Select the **Password protect all HTTP pages** check box to password protect all HTTP pages.
   - Enter **Port number** in the Port text field. The IPBS is by default administered over the network via the TCP port 80 (http). If port 80 is not to be used another port can be set

up for access. Set this value to 0 to disable http traffic (recommended). Attempts to contact the device using the http protocol will result in an *Unable to connect* message.

- Enter **HTTPS Port** in the HTTPS Port text field. To access IPBS securely, use the TCP port 443 (https). Set this value to anything except zero (0) to enable https traffic. The default value is 443. The value zero (0) disables https traffic which is not recommended.
- Enter ***Network Base Adresss*** / ***Network Base Mask*** in the **Allowed stations** text fields to only allow access only from matching network, for example:172.16.0.0/255.255.0.0
- In the **Active HTTP sessions** field all ongoing HTTP traffic is displayed.

2. Click **OK**.

Configure the HTTP Client settings

A list of URL that require authentication can be specified.

1. Select **General** > **HTTP Client**.
2. Enter the **URL** in the **URL** text field.
3. Enter **User** and **Password** in the **User** and **Password** text fields.
4. Click **OK**.

   A new row will be shown and more URLs can be added.

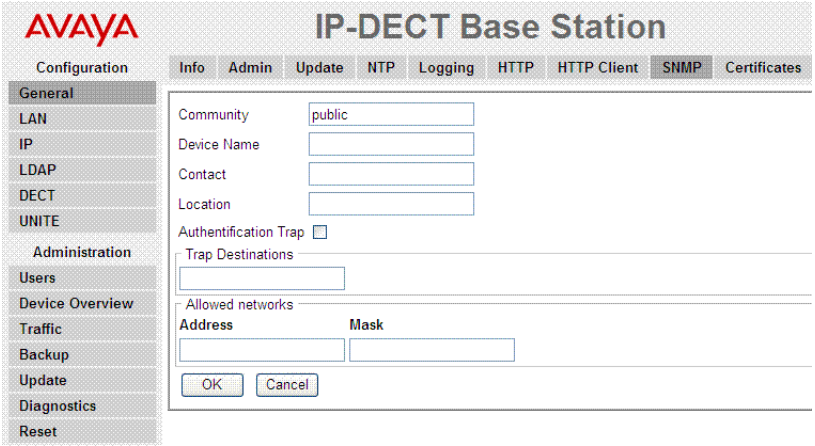
SNMP

Faults can be reported in the IP-DECT system via the Simple Network Management Protocol (SNMP). The SNMP framework has three parts:

- An SNMP manager: the system used to control and monitor the activities of network hosts using SNMP.
- An SNMP agent: the software component within the managed device that maintains data for the device and reports data, as needed, to managing systems.
- A MIB: The Management Information Base (MIB) is a virtual information storage area for network management information.

The agent and MIB reside on a network device (for example, router, access server, or switch). To enable the SNMP agent on the IPBS, the relationship between the manager and the agent must be defined.

Figure 26: Configure the SNMP settings

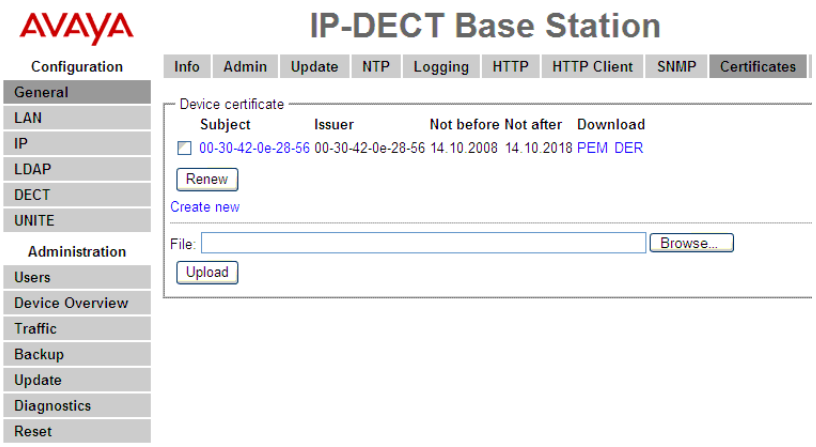


1. Select **General** > **SNMP**
2. Enter a name in the **Community** field if you are not using the standard community name (public). The community text string acts like a password to regulate access to the agent on the Base Station.
3. Enter a device name in the **Device Name** field. This field is optional and serves only informational purposes.
4. Enter the name and phone number of the contact person in the **Contact** field. This field is optional and serves only informational purposes.
5. Enter a location in the **Location** field. This field is optional and serves only informational purposes.
6. Select the **Authentification Trap** check box to enable the sending of authentification traps. Access via SNMP is only possible if the correct Community Name is entered. If enabled a trap will be generated in the event of access with an incorrect Community Name.
7. Enter the IP address of the desired trap destinations in the **Trap Destinations** field. SNMP traps will be sent to all destinations.
8. Enter the IP address and mask of the networks that are allowed to send SNMP requests. All networks are allowed if the field is empty.
9. Click **OK**.

Certificates

The **Certificates** tab is part of IP Security in IP-DECT. For more information on IP Security, see chapter IP Security on page 60.

Select **Configuration** > **General** > **Certificates**.



As described in Certificate Handling Options on page 62, there are three possible certificate options:

1. Default device certificate, see table below.
2. Self-signed certificates, see Self-signed Certificates on page 99.
3. Certificates signed by a Certificate Authority (CA), see Certificate Signing Request (CSR) on page 101.

The following table describles the different functions.:

Field name	Description
Subject	Click the hyperlink (under the *Subject* header) to display certificate details in a window.
PEM	Click the *PEM* hyperlink (under the *Download* header) to download the certificate in PEM format.
DER	Click the *DER* hyperlink (under the *Download* header) to download the certificate in DER format.
Create New	The *Create New* hyperlink is used for two purposes: • Self-signed Certificates on page 99 • Certificate Signing Request (CSR) on page 101
Upload	Use the Upload function to upload a certificate file to the device. 1. Click the **Browse** button 2. Select a certificate file 3. Click the **Upload** button to upload the file to the device. **Note:** The Upload function requires a previously issued CSR to exist.

Default Device Certificate

This section corresponds to option 1 in Certificate Handling Options on page 62.

If the default device certificate is missing for the device it will be generated, together with a key pair, when the IPBS is upgraded to version R3. The default certificate contains the MAC address of the device and will be valid for 10 years.

If the self-signed certificate is deleted and the device is restarted, a new certificate and key pair will be generated.

HTTPS is deactivated during the generation (creation) of the certificate.

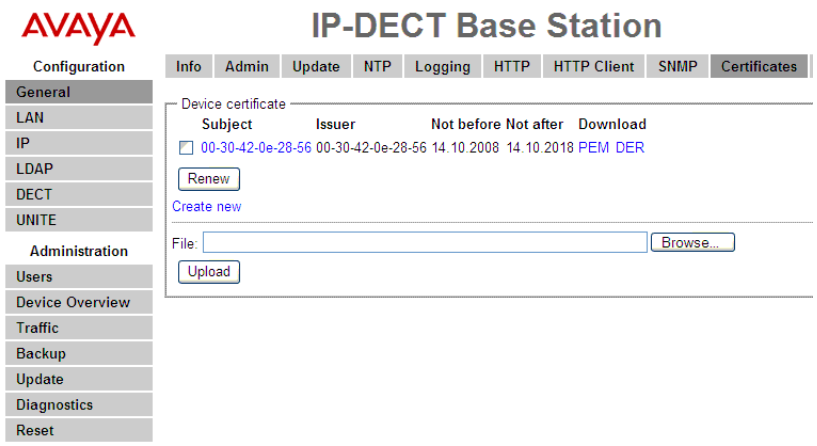
The default certificate is a self-signed certificate. This means that certificates cannot be verified and thus the user/administrator will be prompted by the web browser to accept the certificate before it can be used. From this point on within the browser session (as long as the certificate is not changed) communication between the browser and the device is possible without further accept operations from the user/administrator.

If the device certificate is replaced or regenerated the user/administrator has to manually accept the new certificate.

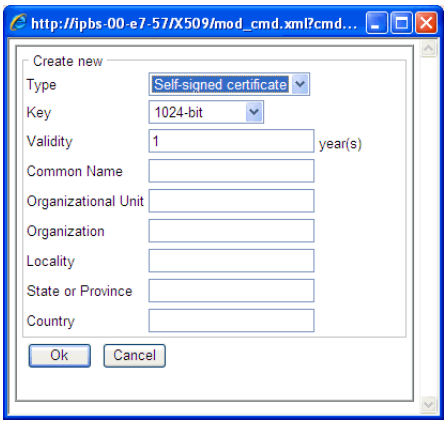
Self-signed Certificates

This section corresponds to option 2 in TLS Certificates on page 62.

1. Select **Configuration** > **General** > **Certificates**.



2. Click the **Create New** hyperlink in the **Device Certificate** section. A window will open.
3. In the window, select **Self-signed certificate** in the **Type** drop-down list.



4. Select/Enter the following settings:

Field name	Description
• Validity	Enter the default validity in years. This is a mandatory field.
• Key	Select either the desired key strength (1024-bit, 2048-bit, 4096-bit).
• Common Name	Enter the domain name or IP address for the device. This is the same value as entered in the web browser when accessing the device.

5. Click **OK**.

6. A new key pair and a certificate will be created. This may take up to one hour depending on the key strength selected. During this time the device will be fully operational with the exception of https not working and the certificate tab pane not being visible.

Certificate Signing Request (CSR)

This section corresponds to option 3A & 3B in TLS Certificates on page 62. This will be the most common options for IP-DECT systems. For more information on CSRs see Certificate Authorities on page 61.

1. Select **Configuration** > **General** > **Certificates**.
2. Click the **Create New** hyperlink in the **Device Certificate** section. A window will open.

3. In the window, select **Signing Request** in the **Type** drop-down list.
4. Select/Enter the following settings:

Field name	Description
• Validity	This is an read-only information field indicating a default mandatory validity of 1 year. The time length of the validity is defined by the CA.
• Key	Select the desired key strength (1024-bit, 2048-bit, 4096-bit) or select to reuse the old key pair (this is not recommended).
• Common Name	Enter the domain name or IP address for the device. This is the same value as entered in the web browser when accessing the device.

5. Click **OK**. The windows closes.

   A key pair and a CSR file will be created. This may take up to one hour depending on the key strength selected. During this time the device will be fully operational with the exception of https not working and the certificate tab pane not being visible.

   When the CSR file has been generated it is visible in the **Signing Request** section of the **Certificates** page.
6. Download the CSR file by clicking the PEM or DER link in the **Signing Request** section.
7. Send the CSR file to your CA.
8. If successful your CA will send back a digitally signed certificate. This file should now be uploaded.
9. Select the certificate file.
10. Click **Upload**.

Note:

If the CSR file generated in step 5 is deleted before receiving the reply from the CA (in step 8) it will not be possible to upload the signed certificate file in step 10. The system will automatically delete the CSR file when step 10 has completed.

LAN

This section describes how to do the following configurations and settings.

- Set DHCP mode
- Set IP static address
- Set dynamic IP address
- Set link type
- Configure VLAN
- View LAN statistics

Set DHCP Mode

The IPBS can have different DHCP modes, see the table below.

Off	Used if the IPBS should have a static IP address.

Client	The IPBS acts as a DHCP Client, if there is a DHCP server in the network it will be assigned an IP address
Automatic	In automatic DHCP mode the IPBS will act as a DHCP client on power up. If the IPBS is restarted by shortly pressing the reset button it will get the IP address 192.168.0.1 and the netmask 255.255.255.0 for the LAN port.

Change DCHP mode following the steps below.

1. Select **LAN** > **DHCP**.
2. Select DHCP mode in the **Mode** drop-down list.
3. Click **OK**.
4. Reset in order to make the changes take effect, if **Client** or **Automatic** is set, see Reset on page 135.

Set a Static IP Address

It is necessary for the Master and the Standby Master to have static IP addresses. The slaves can have dynamic IP addresses retrieved from the network DHCP server.

Ask the network administrator to reserve an IP address for the Master and Standby Master.

1. Select **LAN** > **DHCP**.
2. Select **Disabled** in the **Mode** drop-down list.
3. Click **OK**.
4. Do NOT reset the device yet. Set a static IP address first.
5. Select **LAN** > **IP**.
6. Enter **IP Address**, **Network Mask**, **Default Gateway** and **DNS Server** addresses provided by the network administrator in the text fields.

   You can also enter an alternative DNS Server in the **Alt. DNS Server** text field and select the **Check ARP** check box to detect and prevent ARP poisoning attacks.
7. Click **OK**.
8. Reset in order to make the changes take effect, see Reset on page 135.
9. Start the web-based configuration, using the static IP address.

Dynamic IP address via DHCP

The Slaves/Radios can have dynamic IP address allocation if the network has an DHCP server.

1. Select **LAN** > **DHCP**.

2. Select **Client** in the **Mode** drop-down list.
3. Click **OK**.
4. Reset in order to make the changes take effect, see Reset on page 135.

Note:
If the DHCP lease time is shorter than the time-to-live of the name/IP address association in the Windows Internet Name Service (WINS) server, it may cause a mismatch, and a wrong device may be reached if its WINS name is used.

Link

The link setting should be set to ***auto*** under all normal circumstances.

Configure VLAN

Identity and priority settings for VLAN are done in the **LAN** > **VLAN** sub menu.

Note:
It is necessary to have a VLAN with the same ID as configured in the IPBS otherwise it will not be possible to access the IPBS.

Note:
If "VLAN = 0" Quality of Service (QoS) is inactive according to 802.1q.
It is also recommended to avoid "VLAN = 1" as it often is used as a default VLAN setting.

View LAN Statistics

To view statistics of LAN events: Select **LAN** > **Statistics**

To reset the ethernet statistics counters: Click the **clear** button.

IP

Configure IP Settings

The following settings can be done in the **IP settings** sub menu:

ToS priority, RTP Data and VoIP Signalling:	Determines the priority from the ToS field in the IP header. This function can be used if the router can use ToS priority control. Hexadecimal, octal or decimal values can be used; 0x10, 020 and 16 are all equivalent. There are two fields for ToS priority, one for RTP Data and one for VoIP Signalling[1]. Other types of traffic (for example http and ldap) are not prioritized and use 0x00. **Note:** Remember that the same value should be set in the ToS field for all devices.
RTP ports:	If the ports fields are left blank, the ports 16384 to 32767 will be used.

1. VoIP Signalling includes roaming, handover, registrations towards the IP-PBX etc.

1. Select **IP** > **Settings**.
2. Enter the ToS priority value (recommended value is **0xb8**) in the **ToS Priority - RTP Data** text field.
3. Enter the ToS priority value (recommended value is **0x68**) in the **ToS Priority - VoIP Signalling** text field.
4. Select which ports to use for RTP traffic by entering the first port in the **First UDP-RTP Port** text field.
5. Enter the number of ports to use in the **Number of Ports** text field.
6. Click **OK**.

Routing

View the IP routing by Select **IP** > **Routing**.

LDAP

The Lightweight Directory Access Protocol (LDAP) protocol is required for systems in which the server and a replicating client access a joint user database. All IPBSs in the system have access to the database, one of the IPBSs can be configured to be the LDAP server.

The joint user database contains information about the users registered in the system. It also contains the system configuration, that is the configurations made under the **DECT** menu.

This section describes how to do the following configurations and settings.

- Configure LDAP Server
- Check LDAP server Status
- Configure LDAP Replicator
- Check LDAP Replicator Status

Configure LDAP Server

The IP-DECT system needs an LDAP server. If the PBX is set up as an LDAP server, the IPBS Master should be set up as an LDAP Replicator. If the IPBS Master is set up as an LDAP Server, the Standby Master could be set up as an LDAP Replicator, see Configure LDAP Replicator on page 107.

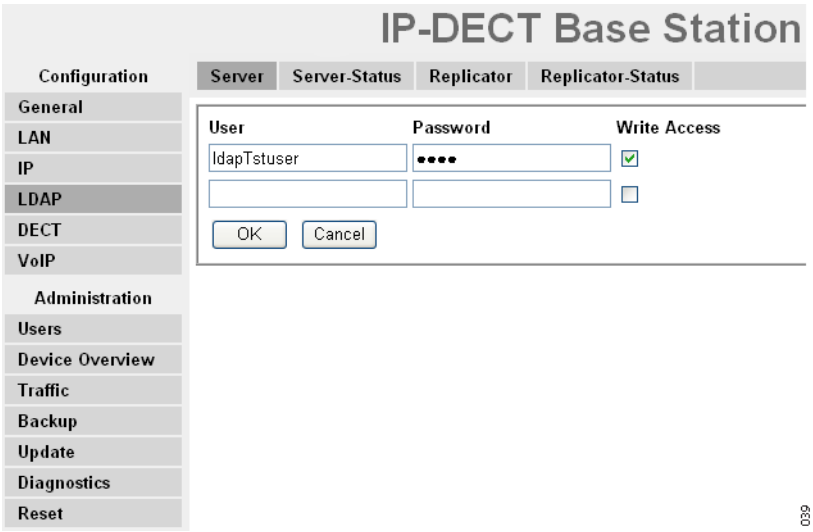
Setup the IPBS as an LDAP server:

Note:

The selected user name and password must be the same in both the Master and the Standby Master.

1. Select **LDAP** > **Server**.
2. Add a user, for example ldap-user, in the **User** text field.
3. Enter a password in the **Password** text field.
4. Mark the **Write Access** check box.
5. Click **OK**.

Figure 27: Setting LDAP User Name and Password



Check LDAP Server Status

1. Select LDAP > Server Status

The following information can be checked:

- connections - Total number of active connections to the LDAP server
- write connections - Number of write-enabled connections
- rx search - Number of received search requests
- rx modify - Number of received change requests
- rx add - Number of added objects
- rx del - Number of deleted objects
- rx abandon - Number of lost connections
- tx notify - Number of sent change notifications
- tx error - Number of sent error notifications
- tx error 49 - Number of sent error notifications due to invalid credentials
- tx error 50 - Number of sent error notifiatiosn due to insufficient access rights

Configure LDAP Replicator

LDAP Replicators are configured in the following cases:

- User data is replicated from the Master to the Standby Master. The replicator is configured on the Standby Master (Full Directory Replication).

- In case of one common IP-DECT system with multiple IPBS masters on multiple locations, the user data is replicated from one specific IPBS Master holding the LDAP database (LDAP Server) to the other IPBS Masters (LDAP replicators). The replicator is configured on these additional IPBS Masters (Full Directory Replication).

Configure Full Directory Replication

1. Select **LDAP** > **Replicator**.
2. Mark the **Enable** check-box.
3. Enter the IP address to the LDAP server in the **Server** text field.
4. Enter the IP address to the alternative LDAP server in the **Alt. Server** text field.

   Note:
   If this IPBS is configured as a standby LDAP server, enter **0.0.0.0** in the **Alt. Server** text field.
5. Select a filter method from the **Filter Type** drop-down list
   - **Dect Gateway Name** - Enter the name of the DECT gateway to limit the replication to users of a certain group
   - **LDAP Filter** - Enter an LDAP filter to limit replication to certain LDAP objects
6. Enter the LDAP User name and Password in the **User** and **Password** text fields.
7. Click **OK**.

   Note:
   In the case of Master to Standby Master Full Directory Replication, do not register new Portable Devices when the LDAP Server is down even if there is a Standby LDAP Server in the system.

Check LDAP Replicator

1. Select **LDAP > Replicator-Status**.

   The following information can be checked:
   - Server - The IP address and port of the LDAP server.
   - Remote - State of replication in the source directory. Three states are possible: *Stopped, Active, Completed*
   - Notify - Number of change notifications received from the server
   - paged - Number of objects received from AD server in response to paged search requests
   - No match - Number of objects received that are not matching the configured LDAP filter condition
   - Discarded - Number of objects discarded because no suitable map is found

- Local - State of replication in the destination directory. Three states are possible: *Stopped, Active, Completed*
- Notify - Number of change notifications sent to the server
- Add - Number of locally added objects
- Del - Number of locally deleted objects
- Modify - Number of locally modified objects
- Pending - Number of local objects waiting to be sent to the server

Expert tool

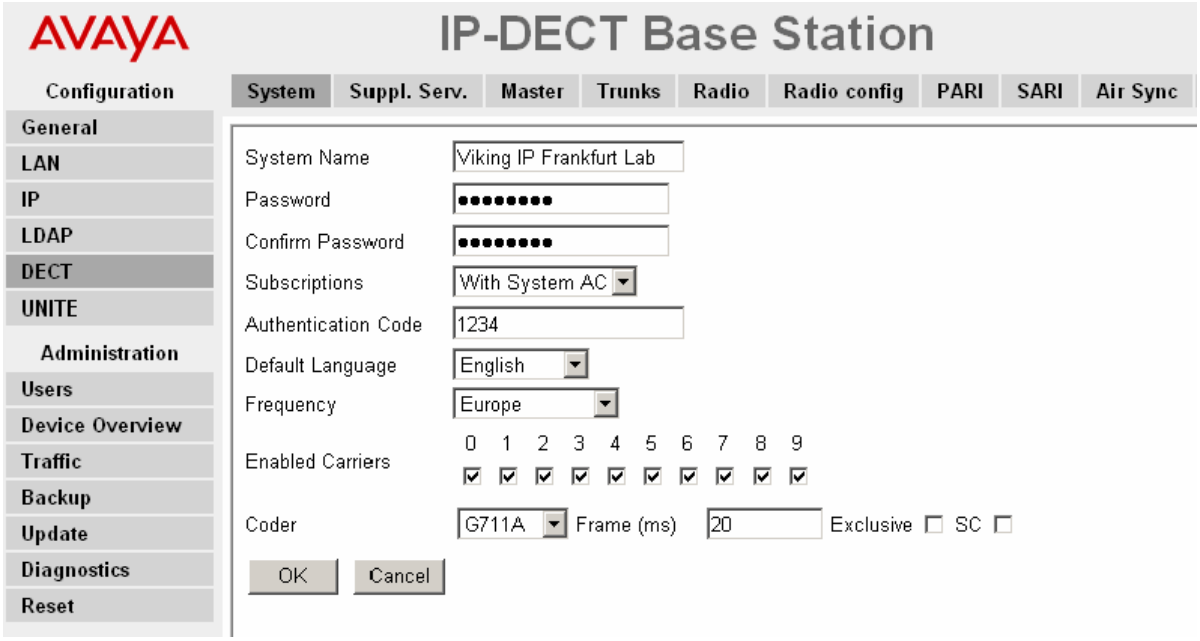
The Expert function should only be used after consultation with Avaya Technical Support.

DECT

This section describes how to do the following configurations and settings.

- Change DECT user name and password
- Change Subscription Method
- Configure Authentication Code
- Set Default Language
- Set Frequency Band
- Enable/Disable Carriers
- Configure Coder
- Configure Supplementary Services
- Select Master Mode
- Configure Trunks
- Enable/Disable Radio
- Multiple Radio Configuration
- Assign PARI
- Enter SARI
- Configure Air Synchronization

Figure 28: The DECT System configuration page



Change System Name and Password

Note:

This is only applicable for a Master IPBS, never on a Slave IPBS.

The system name and password must be the same for all IPBSs throughout the system. Reset in order to make the changes take effect, see Reset on page 135.

1. Select **DECT** > **System**.

   Note:

   To access the System tab, the Master mode has to be activated, see Select Mode on page 113.

2. Write a system name in the System **Name** text field.
3. Enter a new password in the **Password** text field. Repeat the password.
4. Click **OK**.

Change Subscription Method

The IP-DECT system can be set to use the following subscription methods:

- ***With User AC***: only individual registration with User AC possible.
- ***With System AC***: enables anonymouse subscription, individual registration with User AC is also possible.

- ***Disable***: disables subscription.

Select subscription method:

1. Select **DECT** > **System**.

   Note:
   To access the **System** tab, the Master mode has to be activated, see Select Mode on page 113.

2. Select subscription method in the **Subscriptions** drop-down list.
3. Click **OK**.

Configure Authentication Code

If allow anonymous subscription method is selected it is needed for the IP-DECT system to have an authentication code configured, select a code consisting of 4 to 8 numbers (0-9).

1. Select **DECT** > **System**.

   Note:
   To access the System tab, the Master mode has to be activated, see Select Mode on page 113.

2. Enter an authentication code in the **Authentication Code** text field.
3. Click **OK**.

Set Default Language

If the telephone does not send language information to the system, this setting determine which language that is displayed for some text messages (for example hung-up and disconnected).

1. Select **DECT** > **System**.

   Note:
   To access the System tab, the Master mode has to be activated, see Select Mode on page 113.

2. Choose language in the **Default Language** drop-down list.
3. Click **OK**.

Set Frequency Band

The IPBS can operate in the following frequency bands:

- 1880 - 1900 MHz, Europe, Africa, Middle East, Australia, New Zeeland and Asia
- 1910 - 1930 MHz, South America
- 1920 - 1930 MHz, North America

1. Select **DECT** > **System**.

   Note:
   To access the System tab, the Master mode has to be activated, see Select Mode on page 113.

2. Select frequency area in the **Frequency** drop-down list.

   Important:
   You must select the correct frequency band for your region. **Otherwise you will violate local laws!**

3. Click **OK**.
4. Reset in order to make the changes take effect, see Reset on page 135.

Enable Carriers

The IPBS has 5 carriers for the North American frequency band and 10 carriers for the other frequency bands. Under all normal circumstances all carriers should be enabled.

To enable or disable carriers:

1. Select **DECT** > **System**.

   Note:
   To access the System tab, the Master mode has to be activated, see Select Mode on page 113.

2. Mark/unmark the **Enabled Carriers** check boxes.
3. Click **OK**.

Configure Coder

Select the preferred coder, and enter the desired frame length. If exclusive is selected for the coder the IPBS is forced to use that coder. With Silence Compression enabled no information is sent during pauses in the conversation, this is used to save bandwidth.

Note:
When exclusive is enabled for a coder it might be impossible to make calls outside the IP-DECT system. G450 system only supports G.711A/ µLaw, G.729a, Coder G723-53 is not supported.

1. Select **DECT** > **System**.

   Note:
   To access the System tab, the Master mode has to be activated, see Select Mode on page 113.

2. Choose the applicable coder in the Coder drop-down list.

3. Enter the sample time in milliseconds in the **Frame** text field.
4. Choose Exclusive enabled or disabled by checking/unchecking the **Exclusive** check box.
5. Choose Silence Compression enabled or disabled by checking/unchecking the **SC** check box.
6. Click **OK**.

Configure Supplementary Services

The supplementary services determine to handle the defined dial codes locally in the IPBS master. All other dial codes will be forwarded to the Call Manager. This needs to be configured on Master and Standby Master.

1. Select **DECT** > **Suppl. Serv**.

   Note:

   To access the System tab, the Master mode has to be activated, see Select Mode on page 113.

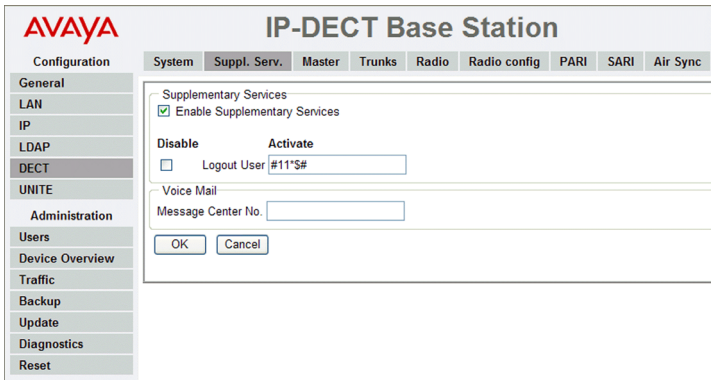
2. Select the **Enable Supplementary Services** check box to activate the supplementary services below. The default **Activate** feature code is preset.

   Note:

   To disable a specific service, mark the Disable check box in front.

3. Enter the Message Center Number in the **Fix Message Center No.** field.
4. Click **OK**.
5. Reset in order to make the changes take effect, see Reset on page 135.

Figure 29: Supplementary services



Select Mode

The IPBS can operate in four different modes: Master, Standby Master, deployment and off.

1. Select **DECT** > **Master**.
2. Select in the **Mode** drop-down list:
   - Off, if this IPBS is radio only.
   - Active, if this IPBS is the Master.
   - Standby, if this IPBS is the Standby Master.
   - Deployment
3. If you have selected the "Standby" mode enter the primary Master IP address in its text field.
4. Click **OK**.
5. Reset in order to make the changes take effect, see Reset on page 135.

Enter Admin Password

1. Select **DECT** > **System**.
2. Enter password.

Note:

It is recommended to create a backup of the IPBS configuration when the administrator password has been changed, see Backup on page 129.

Configure Master ID

Only applicable on the Master and standby Master.

The Master ID configuration is only needed in a Multi Base Station Master scenario. If only single IPBS Master is used, Master ID “0” is recommended.

In a Multi Base Station Master scenario, an individual Master ID for each IPBS Master in the range of 0 and 250 needs to be configured. It is recommended to use Master ID “0” for IPBS Master1, which is the LDAP server of the IP-DECT system. All further IPBS Masters doing the LDAP replication should use a Master ID from 1 to 250.

A standby Master needs to use the same Master ID as the corresponding IPBS Master.

Configure IP-PBX

Only applicable on the Master.

1. Select **DECT** > **Master**.
2. Select PBX.
3. Enter ARS Prefix, for example, 00 for calling outside the building.
4. Enter International CPN Prefix, for example, 0046 for Sweden.

5. Enter National CPN Prefix, for example, 031 for Göteborg.

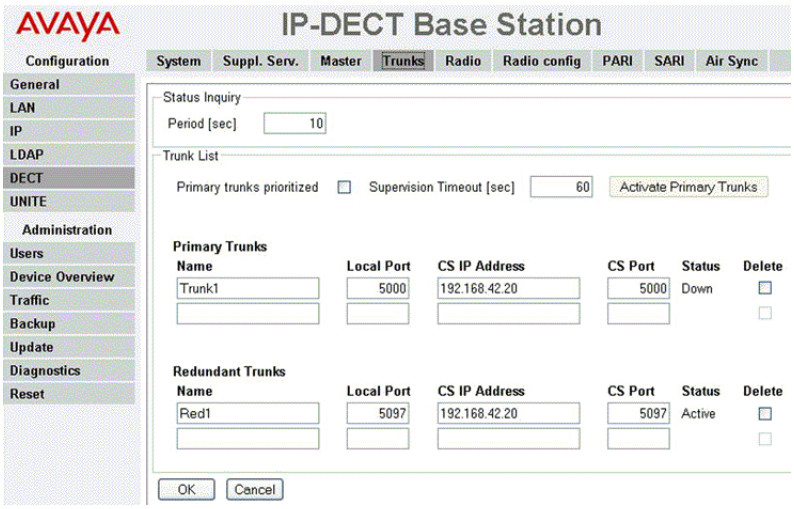
Configure Trunks

1. Enter the IP Address of the PBX in the Communication Server **(CS) IP Address** field and the port of the PBX in the Communication Server **(CS) Port** field.
2. Enter port address of the IPBS in the **Local Port** field.

Note:

If there is a mismatch in **Local Port** of the IPBS web page and the Far-end listen port of the signaling group in the Communication Manager, the trunks state is shows as active, but only one way communication is possible.

Figure 30: Trunks



There are two kinds of Trunks; Primary and Redundant. One or more Primary Trunks can be configured. They are used in the first place. One ore more Redundant Trunks can be configured. They are only used if not *any* Primary Trunk is in "Active" mode. That is, *all* Primary Trunks must be in "Down" mode.

Load Balancing

There are possibilities to configure several Primary trunks (and Redundant trunks) for the communication between the IPBS master and the Communication Manager. One trunk can support up to 250 simultaneous IP-DECT calls. If you have more IP-DECT users it is recommended to configure additional trunks. An IP-DECT user will automatically be assigned to one of the "Active" trunks.

So we'll have a kind of static load balancing in the system. Nevertheless, if the number of "Active" trunks is not sufficient for the configured amount of DECT users, it might be possible that some users might be busy (because the assigned trunk is busy) while others are still available.

Note:

It is recommended not to configure more than 10 active and 10 redundant trunks in the IPBS Master. The group of active trunks will mostly be configured at the same Communication Manager system or even on a Communication Manager-Network (e.g. several Communication Manager systems with a trunk in between working on the same numbering plan). Same is valid for the group of redundant trunks.

Trunk modes

There are four different modes for a Primary and Redundant trunk.

Note:

A Primary Trunk can never be set to Standby.

Active	The trunk is up and accepts traffic.
Up	The trunk is up but does *not* accept traffic as it is not set to "Active" mode.
Down	The trunk is down and not working.
Standby	The trunk is ready to be used for redundant purpose.

With "Up" and "Down" mode means also wether the trunk has contact with the PBX and is correctly configured in both the PBX and IP-DECT system. A trunk that is "Active" or "Up" is correctly configured and correctly attached. A trunk that is "Down" has a fault. Either in the configuration or the hardware (broken cable).
Fault finding can be to check that the IP-address is correct as well as to check the PCB and the cable.

Redundant Trunks

Commonly one or more Redundant trunk is configured as a backup. It is used if *all* of the Primary Trunks are down.

If all Primary Trunks are "Down", that is , changes from "Active" mode or, the Redundant trunks starts working. The Redundant Trunk will get the status "Acitve" or "Down" depending if it works or not. If it gets the status "Active" the calls will go through the Redundant Trunk until the Primary Trunks are activated again.

Activation of Primary Trunks

There are two ways of activating the Primary Trunk; Manual and Automatic:

Manual

1. Click on the **Activate Primary Trunks** button. (This button is only available if there is any Primary Trunk in "Up" mode.)

The Primary Trunks then enter "Active" mode and the Redundant Trunks cease to be active and go to "Standby" mode. (New calls go through the Primary Trunks and ongoing calls go through the Redundant Trunks until the calls are finished).

Automatic

1. Mark the check-box **Primary trunks prioritized**.
2. Set the **Supervision Timeout** to desired time. The Primary Trunks are automatically changing from "Up" mode to "Active" mode when the timer is elapsed.

Example:
If the timeout is set to 600 seconds, it means that the system waits 600 seconds (10 minutes) until it is automatically up and running again (on active Primary Trunks). This is the amount of time to fix any problems.

During the Supervision Timeout, there is a continuous condition check of the trunk connection. The timer states the time it must take until a successful connection is established in the system.

Enable the Radio

If the IPBS not shall be used as a Radio, for example only be used as a PARI Master, it can be disabled by marking the checkbox **Disable**.

1. Select **DECT** > **Radio**
2. Clear the **Disable** box.
3. To assign a PARI Master (see Enter IP Address to the Pari Master on page 117 for explanation of PARI Master), enter the name and password of the PARI Master to connect to. If this is the PARI Master, the internal name and password (found under **DECT** > **System**) and the loopback address 127.0.0.1 should be used.

Enter IP Address to the Pari Master

All IPBS need to know the IP address of the Pari Master.

1. Select **DECT** > **Radio**.
2. Write the name for the Pari Master in the **Name** text field.
3. Enter the password for the Pari Master in the **Password** text field.
4. Enter the address to the Pari Master in the **Pari Master IP Address** text field. If this is the Pari Master, enter **127.0.0.1**.
5. Click **OK**.
6. Reset in order to make the changes take effect, see Reset on page 135.

Multiple Radio Configuration

The PARI Master can configure the same Radio settings for all Radios in the system. All settings configured in the Radio Config page replace the local Radio settings. This means that all settings in the **Radio Config** menu will have presedence over values configured locally or received via DHCP options.

- Events and Alarms: See Configure Logging on page 93
- Update: See Configure Automatic Firmware Update on page 91
- Network Time: See Configure the NTP Settings on page 92
- Priority/Diff/Serv: See Configure IP Settings on page 105
- Port Ranges: See Configure IP Settings on page 105

1. Select **DECT** > **Radio Config**.
2. Configure alarm and event forwarding, seeForward Alarms and Events on page 94.
3. Configure automatic firmware update, see Configure Automatic Firmware Update on page 91.
4. Configure NTP settings, see Configure the NTP Settings on page 92.
5. Configure IP settings, see Configure IP Settings on page 105.
6. Click **OK**.

PARI

The PARI is a part of the IPBS broadcast identity, which uniquely identifies an IPBS. This PARI is automatically assigned to each IPBS in the system. But if more than one Avaya IP-DECT system operates within the same coverage area, the systems need to have a unique system identity in the PARI assigned in order to differentiate the systems.

To see the occupied system IDs of other Avaya IP-DECT systems within the coverage area, perform an RFP scan, see Backup on page 129.

1. Select **DECT** > **PARI**.
2. Select a number between 1 and 35. If this is not done the IPBS will randomly select a number.
3. Click **OK**.
4. Reset in order to make the changes take effect, see Reset on page 135.

SARI

The SARI is the system broadcast identity, which uniquely identifies an IP-DECT system. It is needed to make the IP-DECT system operate. The SARI is added in the Master.

Note:

When changing the SARI the subscription data of all subscribed cordless telephones will get invalid even if they are shown as subscribed in the **User** tab. So they have to be unsubscribed manually and subscribed again.

1. Select **Dect** > **SARI**.
2. Enter the licence number delivered by your supplier in the **SARI** text field.
3. Click **OK**.
4. Reset in order to make the changes take effect, see Reset on page 135.

Configure Air Synchronization

This section only applies to the IPBS.

IPBS System

The IPBSs uses the DECT interface to synchronize, one IPBS is assigned the role as "Air Sync Master". It is not necessary to configure which IPBS to synchronize with, this is handled automatically. For more information on air synchronization, see System Description on page 17.

Normally only one Air Sync Master is allowed in one site. If however the site contains for example two buildings and no base station in one building is possible to synchronize to any base station in the other building, in this situation a Air Sync Master may be used in each building. But if there is air sync coverage between the buildings only one Master is allowed in one of the buildings. If two Masters are configured within the same coverage area two different sync systems will be created instead of one. This will make handover and roaming between the systems impossible. As a consequense the air sync slaves will loose synchronization frequently.

Configure Air Sync mode:

1. Select **DECT** > **Air Sync**.
2. Select in the **Sync mode** drop-down list:
   - Master, if this IPBS is the Air Sync Master.
   - Backup Master, if this IPBS is the Air Sync Backup Master.
   - Slave, if this IPBS is an Air Sync Slave.
3. Click **OK**.

Enable LED Indication of Air Sync

LED indication of air sync quality is enabled by marking the LED Indication check box. This indication is used to indicate the air sync quality when planning or troubleshooting the system.

Select Synchronization Source for IPBS in Slave Mode

An automatic selection mode is available allowing the IP-DECT base station to automatically select another IP-DECT base station as a host base. The IPBS automatically creates and updates a list of IPBSs, within the coverage area.

A general criterion in the automatic selection mode is that an evaluation must be done on the bearer. The numbers of incorrect A-fields are accumulated during 100 frames. This value is called the Frame Error Rate (FER). If the FER value is above 90 the bearer cannot be used to start retrieve sync information from. However due to the nature of radio environment the FER value may later increase above 90.

FER value	Description
< 90	In this case the active sync bearer is only replaced if: Alternative sync bearer with lower HOP value is found. Even if an alternative bearer with better FER and RSSI is found this is only selected if the HOP value is lower.
> 90	In this case the active sync bearer is only replaced if: Another bearer with lower HOP value is found. OR Another bearer with same HOP value is found and with BER < 90.
= 100	Assume the slave has locked to a RFP with hop value n. When the RFP have had FER = 100 on the active sync bearer for 80 seconds it is allowed to sync to a RFP with hop value n+1. After another 40 seconds it is allowed to sync to a RFP with hop value n+2, etc. After 9 minutes with FER = 100 the "Sync lost counter" is increased and a restart of the air sync procedure is done. ("Sync lost counter" may increase for a number of other reasons also)

Startup of Master IPBS

When a Master starts up it searches for other IPBSs within the same system during 30 seconds. If any IPBS is found the values for slot, frame, multiframe and PSCN is received and applied to the Master. After receiving all these values or after the timeout of 30 seconds the Master enters the Master state.

In Master state the values are updated locally during all further operation of the Master IPBS and no synchronization to other IPBSs in the same system is done.

With this method it will be possible to restart only the Master in the system. The remaining slaves will be able to maintain synchronization for a few minutes during restart of the Master. The Master will adjust itself to the other base stations at startup. The slaves will notice the Master is back and the sync will be received from the Master.

If no IPBS within the same system is detected during the first 30 seconds at startup initial values will be selected and the IPBS will enter Master state with these values.

Sync Backup Master

Only one Sync Master base station needs to be configured for a system. But if this single base station fails the entire system will fail. It is therefore possible to configure a sync Backup Master base station in the system.

If a Backup Master base station is configured this base station must be positioned next to the ordinary Sync Master. A good value for RSSI is between -30 and -50 dBm.

A sync Backup Master base station will start to search for an active Sync Master within the coverage for 1 minute. If a Sync Master is found during this first minute it will start up in slave mode. In slave mode it will continuously search for the Master base station and if the Master is not found it will enter the Master mode. If no Master is found during the first minute of search it will immediately start up in Master mode.

Configure Synchronization to Another DECT System

An IPBS that is configured as a Sync Master can be configured to synchronize to another DECT system. If the site contains multiple DECT systems disturbance between the systems can be avoided if the systems are synchronized. Synchronization between the systems is done by configure an alien RFPI in the Sync Master.

The synchronization using alien RFPI is done on a "best effort" basis. If the alien system is powered down during operation of the IP-DECT system the IP-DECT system will still continue to operate. Also if the alien system is not found during startup of the Sync Master it will start to operate anyway. When configure an alien RFPI at least all carriers that are enabled in the alien RFPI must be enabled in the IP-DECT system.

When configure an alien RFPI and an alternative alien RFPI this must be different RFPIs on the same alien system, not different RFPIs on different alien DECT systems.

Note:

If an alien RFPI is configured on an existing IP-DECT system it may take several hours before the system is synchronized to the alien system.

Configure an alien RFPI in the Air Sync Master:

1. In the Air Sync Master IPBS, select **DECT** > **Air Sync**.
2. Enter the alien RFPI in the **Alien RFPI** text field.
3. Enter an alternative alien RFPI in the **Alt. Alien RFPI** text field (optional).
4. Click **OK**.

Configure Air Sync Backup Master

An backup Air Sync Master may be configured to take over the Air Sync Master role in case of failure or power down of the original Air Sync Master. The Backup Master must be placed close to the original Sync Master. The Backup Master will start to operate as a Sync Master in case the Sync Master has not been heard within 5 minutes. As soon as the Sync Master is heard again the Backup Master will start to operate as a sync slave.

Note:

If the IP-DECT system is configured to synchronize to another DECT system this synchronization will be lost during the time the original Air Sync Master is not operating.

A Backup Master is normally not needed for short interruptions on the Sync Master (restart, software upload, etc.).

Normally no RFPI needs to be configured when using an Backup Master but if it is configured this must be the RFPI of the Sync Master.

Configure Air Sync Slave

Normally no configuration is needed for the air sync slaves.The air sync slaves can be configured to synchronize to a specific IPBS (a specific sync RFPI) in the IP-DECT system. This is normally not needed, but if a sync RFPI is configured care must be taken not to create sync loops.

Configure RFPI in the air sync slaves (optional):

1. In the air sync slave, select **DECT** > **Air Sync**.
2. Enter the sync RFPI in the **Sync RFPI** text field.
3. Enter an alternative sync RFPI in the **Alt. Sync RFPI** text field (optional).
4. Click **OK**.

Example:

The following example is a description of a not allowed air sync ring:

- Base station A configured to listen to B
- Base station B configured to listen to C
- Base station C configured to listen to A

UNITE

Configure Messaging

If an AIWS is to be used in the IP-DECT system, enter the IP address following the steps below.

1. Select **UNITE** > **SMS**.

Note:

To access the SMS tab, the Master mode has to be activated, see Select Mode on page 113.

2. Enter the address to the AIWS in the **IP Address** text field.

3. Click **OK**.

Device Management

If a specific Device Manager (e.g. AIWS) is to be used in the Avaya IP-DECT system, enter the IP address to the Device Manager following the steps below. To set the Master to search for an existing Device Manager on the network, go to Service Discovery on page 124.

1. Select **UNITE > Device Management**.

   Note:

   To access the **Device Management** tab, the Master mode has to be activated, see Select Mode on page 113.

2. Enter the address to the Device Manager in the **Unite IP Address** text field.

   The IP address for the Device Manager that the Master is currently connected to is shown under **Active Settings**.

3. Click **OK**.

4. Reset in order to make the changes take effect, see Reset on page 135.

   Note:

   However if device management is used the IP-Address of the AIWS needs to be configured in the **UNITE -> SMS** tab as well, see Configure Messaging on page 122.

Configure the Location

In a bigger IP-DECT system with offices on several locations it is possible to configure one Master Base Station on each office.

The location ID defined in the AIWS describes the digit handling for centralized phonebook search depending on the location of each Master Base Station. For each Master Base Station and Standby Master Base Station the Location ID needs to be defined to select the appropriate digit treatment for your location. The AIWS is supporting 100 Locations. The location ID need to be between 1 and 250.

Each Master Base Station and standby is identified towards the AIWS by a unique number. The AIWS is supporting 100 Network Regions. It is recommended to set a number between 1 and 100.

1. Select **UNITE > SMS**.

   Note:

   To access the SMS tab, the Master mode has to be activated, see Select Mode on page 113.

2. Enter a number identifying the Location in the **Location ID** field.

   The region ID set in the IPBS Master or Standby Master needs to correspond to one of the configured Region IDs in the AIWS. The digit treatment for a central phonebook query in the cordless telephones will be done according to the defined rules for the region ID of the IPBS Master or Standby Master the telephone is connected to. IPBS Masters and Standby Masters can use the same IP-Region ID, so they will use the same digit treatment rules.

3. Click **OK**.

Service Discovery

If no Device Manager (e.g. AIWS) has been selected to be used in the Avaya IP-DECT system, see Device Management on page 123, then the Master will automatically search for an existing Device Manager on the network. To set the Master to search in a specific domain on the network or to stop the search, follow the steps below.

1. Select **UNITE > Service Discovery**.

   Note:
   To access the **Service Discovery** tab, the Master mode has to be activated, see Select Mode on page 113.

2. Do one of the following:
   - To stop the Master to search for a Device Manager, select the **Disable** check box.
   - To set the Master to search for a Device Manager in a specific domain on the network, enter the domain id in the **Domain ID** text field. The domain id must be the same as the one entered in the Device Manager.

3. Click **OK**.

Send Status Log

It is possible to send alarm and event reports to the Unite system. For example directly to the ESS fault handler or to the UNA (Unite Node Assistant) which in turn forwards the alarm event according to distribution lists.

1. Select **UNITE** > **Status Log**.
2. Enter the address to the server where the Status Log should be sent in the **Unite IP Address** text field.
3. Enter the Resource Identity/Service in the **Unite Resource Identity** text field. If this field is left emply then the default will be UNA (Unite Node Assistant).

Users

This section describes the **Users** sub menu and how to do the following:

- Add a user.
- Search for user information.
- Show all registered users in the IP-DECT system.

Add a User

For information on how to add users to the IP-DECT system, see Add Users on page 87.

Search for User Information

It is possible to search for users registered in the system by name or extension number. Search for a user following the steps below:

1. Select **Users** > **Users**.
2. Enter the name or number to search for in the text field. It is possible to enter only the beginning of the name or number.
3. Click **show**.

Show all Registered Users in the IP-DECT System

1. Select **Users** > **Users**.
2. Click **show**.

Note:

Only the first 12 digits of IPEI/IPDI of the cordless telephone will be shown in the IPBS users tab even if all 13 digits needed to be entered when cordless telephone is subscribed (13th digit is the checksum).

Show Anonymous

The IPEI number is displayed on anonymous registrated telephones.

1. Select **Users** > **Anonymous**.

Unsubscribe Users

1. Select **Users** > **Users**.
2. Click **show**.
3. Click on ***User*** to unsubscibe.
4. Click **Unsubs.**.

   The user is now shown as **Not Subscribed**.

When a user has been unsubscribed in the IPBS the subscription will automatically be deleted in the telephone when the telephone is currently connected to this system.

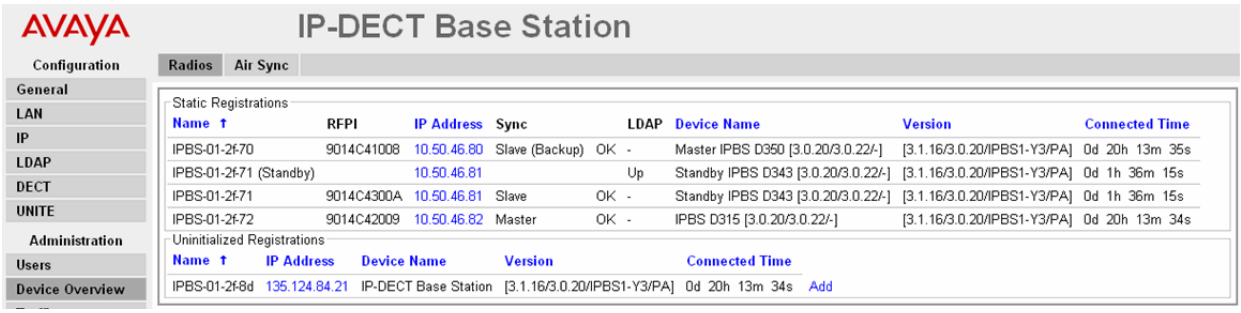
Device Overview

Radios

Information about the devices in the IP-DECT system.

1. Select **Device Overview** > **Radios**.

Figure 31: Device Overview in the Master IPBS


AVAYA
IP-DECT Base Station
Configuration
General
LAN
IP
LDAP
DECT
UNITE
Administration
Users
Device Overview
Radios
Air Sync
Static Registrations
Name ↑ RFPI IP Address Sync LDAP Device Name Version Connected Time
IPBS-01-2f-70 9014C41008 10.50.46.80 Slave (Backup) OK - Master IPBS D350 [3.0.20/3.0.22/-] [3.1.16/3.0.20/IPBS1-Y3/PA] 0d 20h 13m 35s
IPBS-01-2f-71 (Standby) 10.50.46.81 Up Standby IPBS D343 [3.0.20/3.0.22/-] [3.1.16/3.0.20/IPBS1-Y3/PA] 0d 1h 36m 15s
IPBS-01-2f-71 9014C4300A 10.50.46.81 Slave OK - Standby IPBS D343 [3.0.20/3.0.22/-] [3.1.16/3.0.20/IPBS1-Y3/PA] 0d 1h 36m 15s
IPBS-01-2f-72 9014C42009 10.50.46.82 Master OK - IPBS D315 [3.0.20/3.0.22/-] [3.1.16/3.0.20/IPBS1-Y3/PA] 0d 20h 13m 34s
Uninitialized Registrations
Name ↑ IP Address Device Name Version Connected Time
IPBS-01-2f-8d 135.124.84.21 IP-DECT Base Station [3.1.16/3.0.20/IPBS1-Y3/PA] 0d 20h 13m 34s Add

Add Radios

In the Uninitalized Registrations section newly added Radios are shown.

1. Select **Device Overview** > **Radios**
2. Click **Add** to add the Radio to the Master.
3. In the **Add Radio** window enter a name for the device. You can also add a Standby Master IP Address.
4. Click **OK**.

The Radio restarts and it establishes a connection to the PARI Master only.

Name	The unique identification name. The name syntax is ipbs-xx-xx-xx, where xx-xx-xx should be replaced with the last 6 hexadecimal digits of the MAC address.
RFPI	Radio Fixed Part Identity.
IP Address	The IP address, click on the IP address to access the configuration GUI of that IPBS.
Sync	The current synchronization status. Should be **Master OK** or **Slave OK** if synchronized.

LDAP	The LDAP status, can be " " (blank), "server", "-", "up" or "down"
Device Name	The name entered in the general menu.
Version	The current software version.
Connected Time	The elapsed time since connected to the Master.

Delete Radios

In the Static Registrations section, initialized Radios no longer registered to the PARI Master are shown.

1. Select Device **Overview > Radios**
2. In the Static Registrations section, click **Delete** to delete the Radio.
   The Radio's RFPI is now released and can be reused. All other RFPIs in use are not affected.

Move RFPIs

In the Static Registrations section, initialized Radios no longer registered to the PARI Master are shown. If it's vital that the new device keeps the RFPI for the broken device e.g. alarm localization purposes, move the RFPI for the broken device to the new device registered to the PARI Master.

1. Connect the replacing device.
2. Add the Radio to the PARI Master, see Add Radios on page 126.
3. Select Device **Overview > Radios**
4. In the Static Registrations section, click **Move** for the Radio that is broken.
5. In the Move RFPI window, select in the Destination section the new Radio that you want to move the broken Radio's RFPI to.
6. Click the **Move** button.

Existing RFPI on the new Radio is replaced by the broken Radio's RFPI. The new Radio's RFPI is now released and can be reused. All other RFPIs in use are not affected. The broken Radio will be deleted from the Static Registrations section.

Air Sync

This section only applies to the IPBS.

Air Sync status is displayed in the Device Overview > Air Sync menu. For explanation on the information shown for the active and the alternative sync bearers, see the table below.

RFPI	Radio Fixed Part Identity is the Id number of the sync bearer.
Carrier	The carrier used for air synchronization

Slot	The slot used for air synchronization
Hop	The number of hops from the Sync Master to the sync bearer
RSSI	Received Signal Strength Indication
FER	Frame Error Rate, a value between 0 and 100%. Should be below 80% to be able to keep the synchronization.

Traffic

Traffic information is displayed in the Traffic sub menu. For the Master the traffic information for the IP-DECT system is displayed as well as traffic information for the Radio itself (if this Radio is enabled).

Display All Ongoing Calls in the System

All ongoing calls in the IP-DECT system can be displayed by selecting **Traffic** > **Master Calls** in the Master. See the table below for information about the different statistics fields.

Master	
Calls In	The number of incoming calls to the Master.
Calls In Delivered	The number of connected incoming calls in the Master.
Calls Out	The number of outgoing calls in the Master.
Handover	The number of handovers in the Master.
Handover Canceled	The number of failed handovers in the Master.
Abnormal Call Release	The number of abnormal call terminations.

Display Calls

All ongoing calls on an IPBS can be displayed by selecting **Traffic** > **Radio Calls**. See the table below for information about the different statistics fields.

Radio	
Calls In	The number of incoming calls to the Radio.
Calls Out	The number of outgoing calls from the Radio.

Handover	The number of handovers in the Radio.
Handover Canceled	The number of failed handovers in the Radio. **Note:** There can be several reasons for uncompleted handovers occuring. This will in most cases not cause dropped or disconnected calls.

Handover

During call, all ongoing handovers in the IP-DECT system can be displayed by selecting **Traffic** > **Handover** in the Master. Cordless telephones are shown by their IPEI/IDSI number.

Backup

The IPBS configuration can be downloaded and saved on a disc or a server. This is useful when identical configuration should be applied to several IPBSs, for example when configure the slaves in a system. For information on how to load a saved configuration on the IPBS, see Update on page 129.

1. Select **Backup** > **Config**
2. Click **download** or

   Click **download with standard password** to save the configuration with the default system password.
3. Click **Save** in the dialogue window and browse to the place where the configuration should be saved.
4. Click **Save.**

Note:

It is recommended to create a backup of the IPBS configuration when the administrator password has been changed.

Update

This section describes how to do the following configurations and settings.

- Update Configuration
- Update Firmware
- Update the Boot File

Update Configuration

A previously saved configuration can be loaded and activated on the IPBS. See Backup on page 129 for information on how to save a configuration.

1. Select **Update** > **Config**
2. Click **Browse...** and browse to the saved configuration.
3. Click **Upload**
4. Reset in order to make the changes take effect, see Reset on page 135.

Update Firmware

The software can be updated. Follow the steps below to update IPBS with the firmware. Download firmware from the IP-DECT system provider.

Note:

If this operation is interrupted, the firmware in the device will be defect. If a firmware upload is for any reason interrupted, the firmware must be uploaded again. Do not execute a reset before the firmware upload is complete. For information on how to load new firmware if the IPBS is unreachable through the web GUI, see Troubleshooting IP-DECT Base Station (IPBS) on page 496.

1. Select **Update** > **Firmware**.
2. Click **Browse...** and browse to the firmware file.
3. Click **Upload**
4. Reset in order to make the changes take effect, see Reset on page 135.

Update the Boot File

1. Select **Update** > **Boot**.
2. Click **Browse...** and browse to the boot file.
3. Click **Upload**
4. Reset in order to make the changes take effect, see Reset on page 135.

Diagnostics

Logging

The IPBS can generate a number of logs which can be useful when supervising and troubleshooting the IP-DECT system. For information on how to collect the log files, see Configure Logging on page 93. For a description of each log, see the table below.

Setting	Description
TCP	Logs generated upon TCP connection set-ups in the H.225 / H.245 protocol.
DECT Master	Logs generated by the DECT Master software component in the IPBS.
DECT Radio	Logs generated by the DECT Radio software component in the IPBS.
H.323 Registrations	Logs generated upon RAS registration.
Config Changes	Logs generated upon configuration changes in the IPBS or the IP-DECT system.
DECT Stack	A low level DECT log, intended for support departments.

1. Select **Diagnostics** > **Logging**.
2. Select which logs to generate by marking the check box next to the log name.
3. Click **OK**.
4. View the logs by clicking the **syslog** link. The logs are updated in real-time.

Tracing

The information gathered from the trace functionality is mainly used for troubleshooting in case of failure in the system. The trace information is intended for the support departments.

It is possible to trace traffic information on the LAN for troubleshooting purposes.

1. Select the **Enable** check box in the **Remote PCAP** section to enable the use of a network protocol analyzer program, for example Wireshark.
   The **Trace** check box in the **Remote PCAP** section is mainly used by the R&D department to follow the desired network attributes.
2. Select the **TCP/UDP Traffic** check box in the **IP** section to capture traffic information.
3. Click **OK**.

Alarms

All active alarms are displayed here. An alarm is a fault that affects the normal service of the IP-DECT system and may require action from personnel to correct it. An IP-DECT Master can collect alarms from Radios and it can display all active alarms in the system. If an object is removed from the system, object-related alarms are automatically cleared after a timeout period of 30 minutes. Active alarms are also cleared if the related object is restarted.

For a description of the attributes, see the table below.

Attribute	Description
Time	The date and time when the alarm is issued.
Code	A unique number that identifies the alarm. Click the code to get more detailed information about the alarm. For a list of possible codes and their descriptions, see Fault Code Descriptions on page 496.
Severity	It has three possible states: • Critical - Immediate action is required. It is displayed, for example, if a managed object goes out of service. • Major - Urgent action is required. It is displayed, for example, if the capability of the managed object is severely degraded. • Indeterminate - Level of severity cannot be determined
Remote	The IP Address of the object that reported the alarm. Click the IP address to access the object.
Source	The software module that reported the alarm. Together with the code it uniquely identifies an alarm.
Description	A textual description of the alarm.

Events

A history of alarms and errors is displayed here including active alarms. Click **Clear** in the top-right corner to clear the list of alarms and errors.

For a description of the attributes, see the table below.

Attribute	Description
Time	The date and time when the alarm, error is issued or cleared.

Type	The status of the fault. It has four possible states: • Alarm - Alarms displayed in red are active alarms • Alarm cleared - The alarm is already cleared • Alarm timeout - The alarm exceeded the timeout period • Error - Refers to faults that are not active for a specific time.
Code	A unique number that identifies the alarm. Click the code to get more detailed information about the alarm.
Severity	It has three possible states: • Critical - Immediate action is required. It is displayed, for example, if a managed object goes out of service. • Major - Urgent action is required. It is displayed, for example, if the capability of the managed object is severely degraded. • Indeterminate - Level of severity cannot be determined
Remote	The IP Address of the object that reported the alarm. Click the IP address to access the object.
Source	The software modul that reported the alarm. Together with the oode it uniquely identifies an alarm.
Description	A textual description of the alarm.

Performance

It is possible to check different performance parameters. For a description of the parameters, see the table below.

Parameter	**Description**
CPU	Shows CPU utilization
CPU-R	Shows utilization of CPU resources allocated by different tasks
MEM	Shows memory utilization
Concurrent calls	Shows the number of ongoing calls

1. Select **Diagnostics** > **Performance**

2. Select the checkbox(es) for the desired performance statistics.
3. Click **OK**.

One window shows statistics for the last 24 hours. The maximum possible value is displayed in the top-left corner. Click the left or right arrow buttons to see different time frames.

Config Show

Config Show displays the configuration as a text output.

Ping

The ping function is used to determine the response time from the IPBS to a certain IP address. It can be used to analyse the connection between the IP-DECT system components.

1. Select **Diagnostics** > **Ping**.
2. Enter an IP address in the **IP Address** text field.
3. Press **Enter** on the keyboard.

Traceroute

The traceroute function displays how packets travel from the IPBS to a certain IP address. The result is an ordered list of IP addresses with the measured round trip time.

1. Select **Diagnostics** > **Traceroute**.
2. Enter an IP address in the **IP Address** text field.
3. Press **Enter** on the keyboard.

RFP Scan

This section only applies to the IPBS.

To scan for occupied system IDs of other Avaya IP-DECT systems within the coverage area, perform an RFP scan following the steps below.

Note:
Executing an RFP scan will terminate all calls on the IPBS.

1. Select **Diagostics** > **RFP Scan**
2. Click **Start Scanning**

Service Report

To download a service report do the following:

1. Select **Diagnostics** > **Service Report**.
2. Click **download**.
3. Click **Save** and browse where to save the service report.

Reset

Some configuration changes requires a reset in order to take effect. A reset reboots the software. There are two ways to perform a reset:

- Idle reset - waits until there are no active calls in the IPBS.
- Immediate reset - clears all calls and resets the IPBS.

Idle Reset

1. Select **Reset** > **Idle Reset**.
2. Click **OK**.
3. The IPBS will reset when there are no active calls.

Immediate Reset

1. Select **Reset** > **Reset**.
2. Click **OK**.
3. The IPBS will terminate all active calls and reset.

TFTP Mode

Note:

When the IPBS is in TFTP mode it can only be reached using the gwload utility. This mode should not be used during normal operation.

Boot

When the IPBS is in Boot mode it uses a small version of the firmware (minifirmware) which contains only the IP stack and the web interface.

1. Select **Reset** > **Boot**.
2. Click **OK**.

Reset Using the Reset Button

It is possible to do a hardware reset of the IPBS by pressing the reset button. The button is accessed through a hole in the back of the IPBS (figure 12 on page 53).

Note:

Use a pointed object in an non conducting material to perform a reset.

Short press < 1 sec	Restart
Medium press ~ 3 sec	Restart in TFTP mode. In TFTP mode the IPBS can be accessed only through the gwload application. This mode is intended for support and development departments.
Long press ~ 10 sec Wait afterwards until the LED (LED 1 for IPBS) is steady amber.	Factory reset - all configuration parameters will be set to default values.

Quit Operation

To end operating the IPBS web interface simply close the web browser. There is no logout or change account option in the web application.

Commissioning

This section describes the visual inspection and tests that must be executed after completing the installation and initialization of the IP-DECT system. The purpose of the visual inspection and tests is to verify that all installation activities have resulted in a correctly functioning system. If it appears that a part is malfunctioning while the system is installed correctly (i.e.: no cabling faults, no configuration faults), the technician must consult the maintenance section included in this manual for fault finding.

Radio coverage verification tests

The Radio coverage verification consists of two tests:

- Base station operation test
- Coverage area test

Note:

Be sure that the battery in the cordless phones are charged before executing the tests.

Base Station Operation Test

The purpose of this test is to check if all base stations are operational.

1. Use the base station plan (see Planning an IP- DECT System on page 31) to localize the installed radio base stations.
2. Open the Master IPBS web interface **Device Overview** > **Radios** to get a list of all IPBS radios connected to the IP-DECT system. The RFPI of each radio base station is the unique identifier.
3. On a DECT phone enter the Admin menu (see Admin Menu Tree on page 170). go to **Dect Info** > **Link**. In the first line you can find the signal strength SS -xx dBm of the connected base station. The PARI is a unique identifier of the connected base station.
4. Move close to each base station. Verifiy lower led is steady green and upper led is either steady green or off.
5. Check if the DECT phone is connected to it. The PARI in the link display needs to match with the RFPI of the device overview radio list.

After having checked that all base stations are operational proceed with the coverage area test.

Coverage Area Test

The purpose of this test is to verify that there is satisfactory field strength to enable good speech quality everywhere within the covered area (rooms, lift shafts, staircases). This test is executed with two cordless phones and requires two persons.

1. Open the adminstrator menu in the DECT telephone. (see Admin Menu Tree on page 170)
2. Go back to idle and make a call to the 2nd telephone.
3. Select softkey **More** > **DECT Info** > **Link**. In the first line you can find the signal strength SS -xx dBm of the connected base station. The PARI is a unique identifier of the connected base station.
4. One user of the cordless telephone should now start moving around the covered area. Both users must check that a good speech quality is maintained everywhere. Special attention should be paid to areas such as edges of the building and areas behind metal structures where there is a possibility of reduced speech quality.
5. Check signal strength should be better than -68 dBm, speech will get affected at about -75dBm.
6. Mark areas where cracking sounds or mutes are heard.

Evaluation

After having performed the coverage area test, the results should be evaluated. If the coverage is not sufficient you should review the planning and move or add equipment.

Cordless Extension Number Test

This test checks for each cordless phone the complete connection from the IP-DECT system to the PBX. Furthermore it checks that the cordless phones' numbers have been correctly programmed. The test is performed by calling all cordless phone from one specific cordless phone.

1. Put all cordless phone together in order of extension number on a table.
2. Go off-hook with each cordless phone and check that the dial tone is heard.
3. Call with a cordless phone (cordless phone A) all other cordless phones sequentially and check that the cordless phone with the corresponding number on its display rings when called.
4. Call cordless phone A and check if it rings.

Troubleshooting

See Troubleshooting on page 495.

How to Use the Update Server

Summary

Automatic update is based on configuration and firmware information stored on a standard web server and retrieved by the devices on a regular basis.

There are 2 modules in the device which work in tandem. The first is known as "UP0" and actually executes the upload and download of configuration information as well as the download of updated firmware. UP0 is controlled by commands as described below.

The second module is known as "UP1". It serves to poll a given website for changed configuration information. If certain conditions are met, UP1 will issue commands to UP1 to perform the requested updates.

UP0 can also receive commands from the **Update clients** page of the PBX Administration user interface.

System Requirements

One or more regular Web Server that can be accessed by all devices are required. This has been tested with Microsoft IIS and Apache, but any regular Web Server should do.

For best results, the Web Server should be able to maintain a large number of HTTP sessions simultaneously, since potentially all devices may attempt a configuration update at the same time. For example, Microsoft's Personal Web Server is not adequate, since it only support 10 simultaneous sessions.

Installation

To be able to upload (save) device configuration information on the web server, it must allow HTTP PUT requests. All other functions require HTTP GET permissions only.

Since all HTTP requests are performed unauthenticated, the website used must allow anonymous read (and potentially write) access. You may want to restrict access to that site to certain network address ranges.

Configure a Microsoft IIS URL to allow PUT commands:

1. Create a directory where you want to save configurations to
2. Create a virtual directory in Microsoft's IIS manager
3. Select **read** and **write** access

No installation is needed on the IPBSs.

Configuration

See Configure Automatic Firmware Update on page 91 on how to configure the IPBSs for automatic update.

The URL parameter must point to the site where the file containing the maintenance commands is stored. Note that in this URL, no host names are supported. The web servers IP address must be used.

Setting the UP1 Parameters

The applet saves the configuration in a line starting config change UP1.

The full syntax is:

config change UP1 /url *<url>* [/poll *<slow>*] [/poll-fast *<fast>*] [/disc]

If the URL ends with a '/' then a default filename is used based upon the product in question. If for example the URL is http://1.2.3.4/configs/, it is expanded to http://1.2.3.4/configs/update-IPBS.htm.

The product type name used is the one used in the Version line on the devices Info page. Note that the extension is irrelevant, .htm or .txt or no extension at all may be used. On some Web servers, URLs are case sensitive.

The maintenance command file is retrieved initially after the configured poll interval (in minutes) is expired after boot. Short poll intervals can create substantial load on a big network. A value less than 15 minutes (which is the default) is therefore not recommended.

However, for new devices (that is, devices which have been reset to factory settings and never had a successful download of a maintenance command file), the command file is retrieved every minute (for up to 30 minutes). This is done so that a fresh device can quickly retrieve a site depending standard configuration when it is installed. You can change this initial polling interval using the /poll-fast <fast> parameter (this is not recommended).

The /disc parameter can be specified to force the device to close the http sessions used immediately.

When the maintenance command file is retrieved, the commands found in the file are executed in sequence. Theoretically, all commands which can be typed in to a telnet session to the device or which appear in a config file can be used in the maintenance file. However, in most cases, you will use config change commands and commands to the UP0/UP1 modules.

The command file is executed every time it is retrieved (depending on the poll interval). However, in most cases, you don't want it to be executed each time, but only once. For example, if you are about to deploy a certain configuration change to all IPBSs, then you want this change to be done once per IPBS only. This can be achieved by the check command:

mod Communication Managerd UP1 check *<final-command> <serial>*

The devices maintain an internal variable UPDATE/CHECK which is initially (or when the device is reset to factory settings) empty. The check command will compare the <serial> parameter with the UPDATE/CHECK variable. If it is equal, any further processing of the command file is cancelled.

If it differs, the remainder of the file will be processed and, after the last command is executed, the UPDATE/CHECK variable will be set to <serial> and the <final-command> will be executed. The following commands are useful values for <final-command>:

ireset	resets the device as soon it is idle
reset	resets the device immediately
iresetn	resets the device as soon it is idle, only if a reset is required
resetn	resets the device immediately, only if a reset is required
ser	this is a no-op

Often, configuration changes shall be made only during certain times (e.g. non-working hours). This can be achieved using the times command:

mod Communication Managerd UP1 times [/allow *<hours>*] [/initial *<minutes>*]

The times command will check the current time against <hours>. If it does not match this restriction, any further processing of the command file is cancelled. <hours> is a comma separated list of hours. Only those hours listed are considered valid times for execution of the command file.

mod Communication Managerd UP1 times /allow 12,23,1,2,3,4

The command above allows command executions only between 12:00 and 12:59 and 23:00 and 4:59 local time (on a 24h clock). Note that if the device has no time set, all command executions will be cancelled.

If the /initial parameter is set, the no commands will be executed within the first <minutes> minutes after the device has been booted. This is done to avoid firmware download and flashing when installing devices.

mod Communication Managerd UP1 times /allow 12,23,1,2,3,4 /initial 6

The command above suppresses any command file processing within the first six minutes after each boot of the device. If /initial is set, new devices (or those that have been reset to factory settings), the command file will be retrieved even if it normally would be suppressed by the / allow parameter. This allows new devices to retrieve a site specific standard configuration quickly.

Setting the UP0 Parameters

To perform a firmware update, use the following command:

mod Communication Managerd UP0 prot <url> <final-command> <build-serial>

The command above downloads the new firmware from <url> and flash it to the device, then <final-command> is executed.

The IPBSs maintain an internal variable UPDATE/PROT which is initially (or when the device is reset to factory settings) empty. The prot command will compare the <build-serial> parameter with the UPDATE/PROT variable. If it is equal, no firmware will be loaded or flashed. If there is no UPDATE/PROT yet (like for a new device), <build-serial> is compared against the build number of the current firmware. After a successful download, UPDATE/PROT is set to <build-serial>. Note that <build-serial> is not checked against the firmware version actually loaded. It is your responsibility to keep this consistent.

If <url> ends with a slash ('/'), then a default firmware filename is added to the URL depending on the type of the device (e.g. ipbs.bin).

mod Communication Managerd UP0 prot http://192.168.0.10/firm ireset 1.2.2

The command above determines if firmware 1.2.2 is already installed. If not, new firmware will be downloaded from http://192.168.0.10/firm/ipbs.bin, the UPDATE/PROT variable will be set to 1.1.2 and the device will be reset as soon as it is idle.

Similar to the prot command, the boot command will update the boot code.

mod Communication Managerd UP0 boot http://192.168.0.10/firm ireset 205

The command above determines if boot code 205 is already installed. If not, new boot code will be downloaded from http://192.168.0.10/firm/boot_ipbs.bin, the UPDATE/BOOT variable will be set to 205 and the device will be reset as soon as it is idle.

Using UP0, device configurations can be saved to a web server.

mod Communication Managerd UP0 scfg <url>

This will cause the device to upload its current config to url This will be done using an HTTP PUT command. url must be writable thus. With url, some meta character strings are replaces as follows:

Sequence	Replacement	Example
#d	Current date and time	20040319-162544
#m	Prinmary device mac address	00-90-33-03-0d-f0
#h	Device hardware ID	ipbs-03-0d-f0

Setting the RFP_UPDATE0 Parameter

To perform a RFP firmware update, use the following commands.

mod Communication Managerd RFP_UPDATE0 firmware http://192.168.0.10/Worf4_GAP_R4H.s2

The command above specifies the url to the RFP firmware to use.

mod Communication Managerd RFP_UPDATE0 select 0x2753

Specifies which RFPs to update using a hex-encoded bit-mask. Each bit represents an RFP port starting with port 1 at the LSB (0x0001) up to port 16 (0x8000).

0x2753 specifies RFP "1,2,5,7,9,10,11,14" to be updated.

mod Communication Managerd RFP_UPDATE0 schedule DD.MM.YYYY-HH:MM

Specifies when the update shall start. If no date is provided, the update will be immediate when the start command is issued.

mod Communication Managerd RFP_UPDATE0 start /idle

Starts the update or activates the schedule. Normally the /idle command is selected and an update starts only if the RFP is idle.

If multiple RFPs are selected for update, they will be updated one at a time If /sequence command is used.

Example IPBS

This example shows an "update file" for the IPBS.

mod Communication Managerd UP0 prot http://172.20.8.128/ascom/firmware/ ireset 1.0.0

mod Communication Managerd UP0 boot http://172.20.8.128/ascom/boot/ ireset 412

Configuration File Backup

To make a backup of the configuration file, use the following command:

mod Communication Managerd UP0 scfg <url> [<final-command> <save-serial> [/force <hours>]]

The scfg command uploads the current configuration file to the specified <url>.

Example:

mod Communication Managerd UP0 scfg http://192.168.0.10/configs/saved/#h#b5.txt no-op WEEKLY /force 168

The command above saves the device configuration file once a week with a backlog of 5 weeks.

To load a configuration file on the IP-DECT device use the following command:

mod Communication Managerd UP0 cfg <url> <final-command> <serial>

The command loads the configuration file, and all commands in it are executed

Configuring Avaya 3725/3720 telephones

Introduction

This chapter is intended as a guide when installing, configuring and maintaining functionality of the Avaya 3725 and 3720 DECT telephones.

The 3725/3720 can be used straight away in your system but it is highly recommended to install the Portable Device Manager (PDM) or the Avaya In-Building Wireless Server (AIWS). This enables customization of the behavior of the telephone to suite each user profile and the specific PBX used in the system.

The PDM is aimed for smaller sites where the telephones are within reach. The AIWS makes it possible to administrate the telephones centrally via a web interface without the need to collect the telephones.

It is recommended that the reader has basic knowledge of the Avaya system and basic knowledge of subscribing telephones to the PBX.

Getting started with Configuration of the 3725/3720 Telephone

You configure the 3725/3720 Telephone by inserting it into a Advanced Charger, Rackmount Charger or directly over the air (OTA). The charger is connected via USB or ethernet to Portable Device Manager (PDM) or Avaya In-Building Wireless Server (AIWS).

In the case of IP-DECT, it is possible to configure over the air.

Note:

It's recommended to place the handset in idle state in the advanced charger, otherwise you might get synchronization issues between handset and device manager.

Note:

Uploading a language file, phonebook file, or a software download is not possible for 3720 Telephone while in a call.

PDM

PDM runs on a PC. The telephone is configured via PDM as follows:

- Connect a Advanced Charger or a Rackmount Charger via USB to the computer running PDM.
- Start PDM.
- Place the telephone in a charger that is connected to PDM.

For instructions on how to use PDM, see Installing and operating the Portable Device Manager (PDM) on page 239.

AIWS (Avaya In-Building Wireless Server)

The AIWS is run on an Elise 2 Server (AIWS Hardware). For instructions on how to use AIWS, see Installing and operating AIWS on page 289.

Via charger

- Connect a Advanced Charger or a Rackmount Charger via the Ethernet port to your network.

  The charger is by default configured to connect to the network using DHCP. If DHCP is not used in the network, connect each charger via USB to a PDM and configure a static IP address.
- Start AIWS.
- Place the telephone in a charger that is connected to AIWS.

Over-the-air (OTA) via IP-DECT

If OTA is configured in the IPBS the cordless telephones can be administered by the Device Manager without connecting to a charger.

There is no external equipment needed besides AIWS and IP-DECT. Please proceed with Installation of Telephones on page 147.

Installation of Telephones

This section describes the recommended procedure for installing and configuring telephones. There are several ways to install a telephone but the procedures described here guarantees simple maintenance of the system.

It is recommended to use the AIWS to install and maintain telephones in a large system. The reason is that it enables to install, upgrade and configure a large amount of telephones simultaneously. Another benefit is that the collection of the telephones from the user is not needed. They can be maintained while placed in network connected Advanced Chargers on the users desks. Network connected Rackmount Chargers can also be used, or over the air in the case of IP-DECT.

The PDM enables administration of telephones inserted in a Advanced Charger or a Rackmount Charger connected via USB to the administrator's computer.

For AIWS, see Installing and operating AIWS on page 289. For PDM, see Installing and operating the Portable Device Manager (PDM) on page 239.

Preparing PDM/AIWS for handling of 3725/3720

If the parameter definition file (.def file) for the telephone is not present in the PDM or AIWS, it can be added by following the procedure below. The parameter definition file and software files are delivered as a package file with the extension '.pkg'. Note that template files (.tpl) may also be included in a package file.

1. Open PDM or AIWS.
2. In the **File** menu, select **Import** > **Packages**.
3. Select the package and click **OK**.

The package will imported and the files will be created; one definition file with the extension .def and one software file with the extension .bin. Template files may also be created.

File extensions are further explained in an appendix in Installation and Operation Manual, PDM, see File types on page 288, and Installation and Operation Manual, AIWS, see File types on page 418.

Installation of a new Telephone

The installation basically contains three steps:

- Subscription towards the DECT-system – needed to be able to make calls and send messages (Mandatory).

- Create an identity for the telephone in the PDM/AIWS – needed to be able to configure the behavior of the telephone and take backups of the telephone configuration (Recommended).
- Configure the telephone using PDM/AIWS – customize the behavior of the telephone to suite each user profile and the specific PBX used in the system (Recommended).

The installation is described in two different scenarios, see below. Before starting, check which scenario that suits best.

Scenario 1

Note:

This scenario is valid for Avaya Integral Enterprise and IP-DECT. If subscribing towards other systems, follow Scenario 2.

Note:

The telephone to be installed must not have any previous valid registrations. If it has a valid registration, unsubscribe the telephone or use Scenario 2.

Subscribe and create an identity

1. Subscribe the telephone towards the DECT system. The subscription procedure is described in User Manual, Avaya 3725 telephone. During the subscription procedure, the PDM/AIWS identity (User ID) will automatically be set to be the same as the extension number.

Note:

The User ID can be viewed by navigating to the menu:
Settings > Device info > User ID or in the Admin menu:
Settings > Admin menu > Device info > User ID.
To find the Admin menu, see Admin Menu Tree on page 170.

Configure the telephone

1. Insert the telephone into a Advanced Charger or Rackmount Charger connected to PDM/AIWS (not needed if an over the air connection is used). The telephone can be identified by finding the extension number of the telephone in the Number column or IPDI of the telephone in the Device ID column.
   In Telephone Configuration on page 159 there are examples of configurations that can be made.
2. Configure the telephone using the PDM/AIWS, see Configure a Telephone with a Template on page 149.

Scenario 2

Create an identity

1. Insert the telephone in a desktop charger or rack charger connected to PDM/AIWS.

   Note:

   The telephone must not have a User ID. If a User ID exists, it can be removed by performing a facory reset, see Perform a Factory reset on page 152. In addition, a valid parameter definition file for the telephone has been imported to the PDM/AIWS.

2. In PDM/AIWS navigate to the **Devices** tab and locate the telephone in the list of devices. The telephone is identified by finding the IPDI of the telephone in the Device ID column.
3. Select the telephone, make a right-click, click on **Assign number...** and preferably enter the extension number for the telephone.
   The number that is assigned must not be present under the **Numbers** tab. If this is the case, it is recommended to delete the number before **Assign number...** is performed.

   Note:

   It is possible to enter any number or name. For IP-DECT systems, it is recommended to use the extension number of the phone.This number will now be the User ID of the telephone. The User ID can be viewed in the telephone by navigating to the menu:
   Settings > Device info > User ID.

Configure the telephone

In Telephone Configuration on page 159 there are examples of configurations that can be made.

1. Configure the telephone using the PDM/AIWS, see Configure a Telephone with a Template on page 149.

Subscribe the telephone

1. 1 Subscribe the telephone towards the DECT system.
   The subscription procedure is described in User Manual, Avaya 3725 telephone.
   In order to easily identify the telephone, both the IPDI and the User ID are shown in the telephone when initiating the subscription procedure.

Configure a Telephone with a Template

Note:

Ask your supplier for example templates valid for 3725/3720 and your PBX.

It is possible to select a telephone in PDM and directly change one or more configuration parameters. It is recommended to use a template to apply configuration changes to telephones. A template contains one or more parameter settings. By using a template, the same configuration can easily be applied to many telephones simultaneously. Templates are an efficient way to give good control over which changes that are applied to each telephone.

This enables configuration of all aspects of a telephone from sound volume to keypad shortcuts.

Your supplier can provide example templates for different PBX's. The telephone will have full functionality towards the PBX even without such a template. By using such a template, though, the telephone will be customized for that PBX with menu options for PBX specific functions such as Callback.

Create a template

To create a parameter template see chapter PDM Create a Parameter Template on page 280, or chapter AIWS Create a Parameter Template on page 329.

Apply a template

To apply a parameter template see Run a Template to Set Parameter Values on page 261 in chapter Installing and operating PDM, or AIWS Run a Template to Set Parameter Values on page 335.

Save a telephone configuration as a template

You can save all settings of a telephone as template. Please note that this does not include contacts and other personal data. The template will only contain configuration data.

This template can be used as a backup if your want to restore the configuration of the telephone at a later stage or as a template that can be applied to a number of telephones.

Some parameters are user specific. If it is decided to apply this type of template to several telephones, the following parameters may be excluded:

- Owner ID - A text string specified in the standby mode. The parameter is located directly under **Settings > User ID**.
- Phone lock PIN code - The security code used to unlock the keypad. The parameter is located under **Settings > Locks**.

To save a telephone configuration as a template see chapter PDM Create a Parameter Template from a Number on page 281, or chapter AIWS Create a Parameter Template from a Number on page 330.

Synchronizing a telephone with PDM/AIWS

After installing and saving a telephone, it will be synchronized each time it is connected to the PDM/AIWS. The synchronization transfers parameter changes between the telephone and the PDM/AIWS and vice versa as follows:

- If a parameter has been changed in the telephone, it will be transferred to PDM/AIWS.
- If a parameter has been changed in PDM/AIWS while the telephone was disconnected, it will be transferred to the telephone.
- If the same parameter has been changed in both PDM/AIWS and the telephone, the value in PDM/AIWS will be transferred to the telephone.

Maintenance

Definitions

In the replacement descriptions, the telephones are defined as:

- "old telephone" is the telephone to be replaced, possibly damaged but still working
- "new telephone" is the replacement telephone that will get the settings used in the old telephone

Upgrade telephone software

It is possible to upgrade or reinstall the software on a telephone. When upgrading the software of the telephone, any data (for example, messages) may be deleted.

For upgrading a telephone see chapter PDM Upgrade a Device with new Software on page 274, or chapter AIWS Upgrade a Device with new Software on page 349.

Perform a Factory reset

When you perform a Factory reset on a telephone, all configuration settings will be restored to default values, PBX subscriptions will be removed and all data are removed. This includes contacts, messages etc. The software will be left intact.

Factory reset is activated from the Admin menu. See Administration on page 170 to see how to activate the Admin menu, and Admin Menu Tree on page 170 to see where in the menu to find "Factory reset". It can also be activated from PDM.

After a Factory Reset, you should follow the steps under Installation of a new Telephone on page 147.

Replacement procedure choice guide

Depending on situation, two different replacement procedures can be chosen; replacement via PDM/AIWS and Easy Replacement. Use the following list as a guide to choose which procedure to use.

- If a telephone needs to be replaced due to for example a broken display, see Easy Replacement on page 153.

- If the electrical connection is damaged, it might not be possible to follow the Easy Replacement procedure. Depending on fault, it might work to do a replacement via PDM/AIWS, see Replacement of a telephone with the AIWS on page 155 or Replacement of the telephone with the PDM on page 157.
- If two telephones and their settings shall be switched between two users, follow Replacement of a telephone with the AIWS on page 155 or Replacement of the telephone with the PDM on page 157.

Easy Replacement

The easy replacement procedure is done via the telephone display and does not involve a PDM/AIWS. Instead a Advanced Charger or a Rackmount Charger is used.

The following settings are replaced during easy replacement:

- DECT registration
- User parameters (including User ID)
- Contacts

The following settings are *not* replaced:

- Call list
- Messages
- Bluetooth pairing list

Note:

Both the old telephone and the new telephone must be of the same model (3725 or 3720). The same extension number is assigned to the new telephone.

Note:

If you are using the Rack Charger, the *same charging slot* has to be used for both telephones. Currently, only the left charging slot is activated for easy replacement.

Easy Replacement procedure

During the Easy Replacement procedure, the LEDs of the telephone and the charger follow the same LED indications. This means that if the old telephone has a broken display, the LED indications on the charger and on the telephone can be used to follow the replacement procedure. Before and after easy replacement, the LEDs may have different LED indications. For more details, see also LED indications on page 172.

Note:

It is recommended to make sure that the telephone batteries are charged before starting the easy replacement procedure.

Important:
Never remove a telephone from the charger until the instructions in the display or the LED tells you to do so (see status on the LED if the display is broken). If there is an error indication it may be allowed to remove the phone, see troubleshooting Avaya 3720/3725 DECT Telephones on page 500 for further instructions.

Important:
After the old telephone has been in the charger, the new telephone needs to be placed in the charger regardless if the replacement was successful or not. Failing to do so may result in malfunction and the new telephone will need to be sent for service.

1. Start the procedure with the **new** telephone. The telephone shall be switched off. Press and hold the Off-hook key and in the mean time put the new telephone in the charger. **In charger** is displayed.

   Hold the key for at least 3 seconds until **Start phone replacement?** is displayed. The telephone LED changes to flashing orange. Press **Yes**.

2. Press **OK** when the text **Follow the instructions. Each step can take several minutes.** appears in the display.

3. When the telephone is ready, the text **Please insert old phone in charger** appears. The charger LED changes to quick orange flashing.

   Remove the new telephone from the charger. The text **Please insert this phone in charger when old phone is ready.** appears.

4. Put the **old** telephone in the charger (the telephone can either be switched on or off). After a few seconds, the text **Saving settings. Do not remove phone from charger** appears. The charger LED changes to slow orange flashing.

Important:
Do not remove the telephone while the text **Saving settings** is displayed. It may take several minutes.

Important:
If the old telephone can not communicate with the charger due to any destroyed, the LED will not change to slow orange. It will remain at quick orange flashing. As the easy handset replacement is already started with the new phone (steps 1 – 3) it needs to be continued by placing a working phone into the charger. Otherwise the new phone will not come back to operation and will need service, too. Any other phone of the same type (for examle, from a customer installation) can be used to continue step 4. At the end of the replacement procedure the configuration of the “old” and new phone will be exchanged. Starting the easy handset replacement again with the same both phones gives the option to exchange the configuration again. So finally both phones will have the same configuration as they had before.

5. Remove the old telephone from the charger when the text **Please insert new phone in charger.** appears in the display and the charger LED changes to quick orange flashing. (The old telephone is reset to factory settings and automatically restarted.)
6. Put the **new** telephone in the charger. The text **Restoring settings** appears in the display. The charger LED changes to orange slow flashing.

   Important:
   Do not remove the telephone while the text **Restoring settings** is displayed. It may take several minutes.
7. Remove the new telephone from the charger when the text **Phone successfully replaced. Please remove phone to restart.** appears in the display. The LED changes to orange quick flashing. The new telephone is automatically restarted.

Error cases

If there is a battery failure (low battery) for the *old* telephone during Easy Replacement and the charger flashes orange, the procedure can be continued. Charge the battery and put the telephone back into the charger. The easy replacement procedure should be continued. If the LED is red, the procedure cannot be continued.

Replacement of a telephone with the AIWS

Both the old telephone and the new telephone must be of the same device type (3725 or 3720). The same extension number is assigned to the new telephone.

Make sure that the old telephone is saved in the AIWS. Start the Device Manager in the AIWS and navigate to the **Numbers** tab. There shall be a tick in the **Saved** column for the old telephone.

If the telephone is not saved, insert it into a Advanced Charger or Rackmount Charger connected to AIWS and perform a save, see Installing and operating AIWS on page 289.

If it would be impossible to save the old telephone settings, stop this replacement procedure. Instead unsubscribe the old telephone from the PBX, register the new telephone and follow the instructions for installing a telephone, see Installation of a new Telephone on page 147.

When the telephone is saved, unsubscribe the old telephone from the PBX.

The following steps are described in two different scenarios, check which one suits the best before proceeding.

Data included in a replacement transfer

The following data is replaced during a replacement with AIWS:

- User parameters (including User ID)

- Contacts (entered by the user)

Note that the following data is *not* replaced:

- DECT registration
- Call list
- Messages
- Bluetooth pairing list
- Company phonebook
- Downloaded Language

Telephone replacement with AIWS, Scenario 1

Note:

This scenario is valid for Avaya Integral Enterprise and IP-DECT. If subscribing towards other systems, follow Scenario 2.

Note:

The telephone to be installed must not have any previous valid registrations. If it has a valid registration, unsubscribe the telephone or use Scenario 2.

1. Subscribe the new telephone with the same extension number as the old telephone. During the subscription procedure, the AIWS identity (User ID) will automatically be set to be the same as the extension number.

   Note:

   The User ID can be viewed in the telephone by navigating to the menu **Admin menu > Device info > User ID**

2. Insert the telephone into a desktop charger or rack charger connected to AIWS (not needed if an over the air connection is used). Navigate to the Numbers tab in AIWS Device Manager.

   The new telephone now has the same User ID as the old telephone. It will automatically be synchronized and data and parameter settings from the old telephone will be transferred to the new telephone.

   The synchronization will take a while if the Contacts in the original telephone contains a large number of contacts.

Telephone replacement with AIWS, Scenario 2

1. Make a note of the IPDI of the new telephone. It is found by pressing ***#06#** on the telephone.

2. Insert the new telephone into a desktop charger or rack charger connected to the AIWS and navigate to the Numbers tab in the Device Manager in AIWS.
3. Select the old telephone in the list and make a right-click. Click **Associate with device...**. Select the device with an IPDI that matches your new telephone from the list that appears.

   The new telephone is automatically synchronized and all data and parameter settings will be transferred to the new telephone.

   The synchronization will take a while if the Contacts in the original telephone contains a large number of contacts.
4. Subscribe the new telephone.

Replacement of the telephone with the PDM

To see *which* data that is replaced during this process, see Data included in a replacement transfer on page 155.

Both the old telephone and the new telephone must be of the same device type (3725 *or* 3720). The same extension number is assigned to the new telephone.

The new telephone should not be subscribed towards the PBX yet.

1. Perform a factory reset, see Perform a Factory reset on page 152, if the new telephone has been previously used.
2. Make sure that the old telephone is saved in the PDM by starting PDM and navigating to the **Numbers** tab. There shall be a tick in the **Saved** column for the old telephone.

   If the telephone is not saved, insert it into an Advanced Charger or Rackmount Charger connected to the PDM and perform a save.

Note:

If it would be impossible to save the old telephone settings, stop this replacement procedure. Instead register the new telephone and follow the instructions for installing a telephone, see Installation of a new Telephone on page 147.

The following steps are described in two different scenarios, check which one suits the best before proceeding.

Telephone replacement with PDM, Scenario 1

Subscribe the new telephone with the same extension number as the old telephone. During the subscription procedure the PDM identity (User ID) will automatically be set to be the same as the extension number.

Note:

The User ID can be viewed by navigating to the menu **Admin menu > Device info > User ID**.

1. Insert the new telephone into a desktop charger or rack charger connected to the PDM.
2. A pop-up dialogue appears, asking the user to decide whether to use the Number settings in PDM or the Number settings in the device. Select **PDM**.

   The telephone will automatically be synchronized and all data and parameter settings will be transferred to the new telephone. The synchronization will take a while if the Contacts in the original telephone contains a large number of contacts.

Note:

This scenario is valid for Avaya Integral Enterprise and IP-DECT. If subscribing towards other systems, follow Scenario 2.

Note:

The telephone to be installed must not have any previous valid registrations. Unsubscribe telephone or use Scenario 2.

Telephone replacement with PDM, Scenario 2

1. Insert the new telephone into an Advanced Charger or Rackmount Charger connected to the PDM.
2. A pop-up will be displayed. Select the option **Associate with number**. Follow the instructions and select the number of the old telephone, see Associate a Number with a Device on page 262.
3. The telephone will automatically be synchronized and all data and parameter settings will be transferred to the new telephone. The synchronization will take a while if the Contacts in the original telephone contains large number of contacts.
4. Subscribe the new telephone.

Telephone Configuration

Note:

This chapter describes settings in parameter definition files (.def). These files are regularly updated and settings may change slightly. For example "On" to "Enable" or a parameter can be moved to another directory.

Voice Mail

In some systems it is needed to assign the telephone number of the Voice Mail service. The parameter can be set specifically for each PBX subscription on the telephone and is accessed from **Systems > *System x* > PBX Settings > Numbers**. "System x" is replaced with the subscription (System A - System H) that is configured.

Central Phonebook

If the system is equipped with a messaging server with a phonebook service, the Central Phonebook on that server can accessed from the telephone. The number to be used is set to default 999999. It can be changed by editing parameters in a Number or a template.

If the system is not equipped with a Central Phonebook, this menu option can be removed from the telephone by entering an empty value for the corresponding parameter.

The parameter can be set specifically for each PBX subscription on the telephone and is accessed from **Systems > *System x* > PBX Settings > Numbers**. "System x" is replaced with the subscription (System A - System H) that you are configuring.

Company Phonebook

It is possible to create a phonebook that is administered centrally and uploaded to the telephone from PDM/AIWS. If this feature is used, entries from Contacts and Company Phonebook are merged. The Company Phonebook entries are locked and cannot be edited in the telephone.

Create a company phonebook file

The company phonebook file (.cpb) is normally created from an Excel file using a script to extract the information and create the company phonebook file (.cpb). The Excel file, **`Company Phonebook.xls`** is delivered from your supplier.

The format of the rows in the phonebook file is:
<Name><tab><phone number>
followed by additional rows for each entry.

The telephone supports a maximum length of 24 characters in each field, additional characters are truncated when the phonebook file is created. The following characters are accepted in the telephone number field in the phonebook file, but are ignored when the phonebook file is created: ( ) - and " "(space).

Upload a company phonebook file

In PDM or the Device Manager in the AIWS, go to the **devices** tab and select ***device(s)***. In the **Device** menu, select **Upload phonebook**.

Note:
Uploading a new company phonebook will delete the existing company phonebook in the phone. The local contacts will not be affected.

See also Upload a Phonebook on page 273, or Installing and operating AIWS on page 289.

Call Services

Call services is a configurable menu in the telephone. The purpose of the Call services menu is to provide a user friendly access to system dependent functionality such as Absence handling and Call Diversion. The settings for the Call services menu are system dependent.

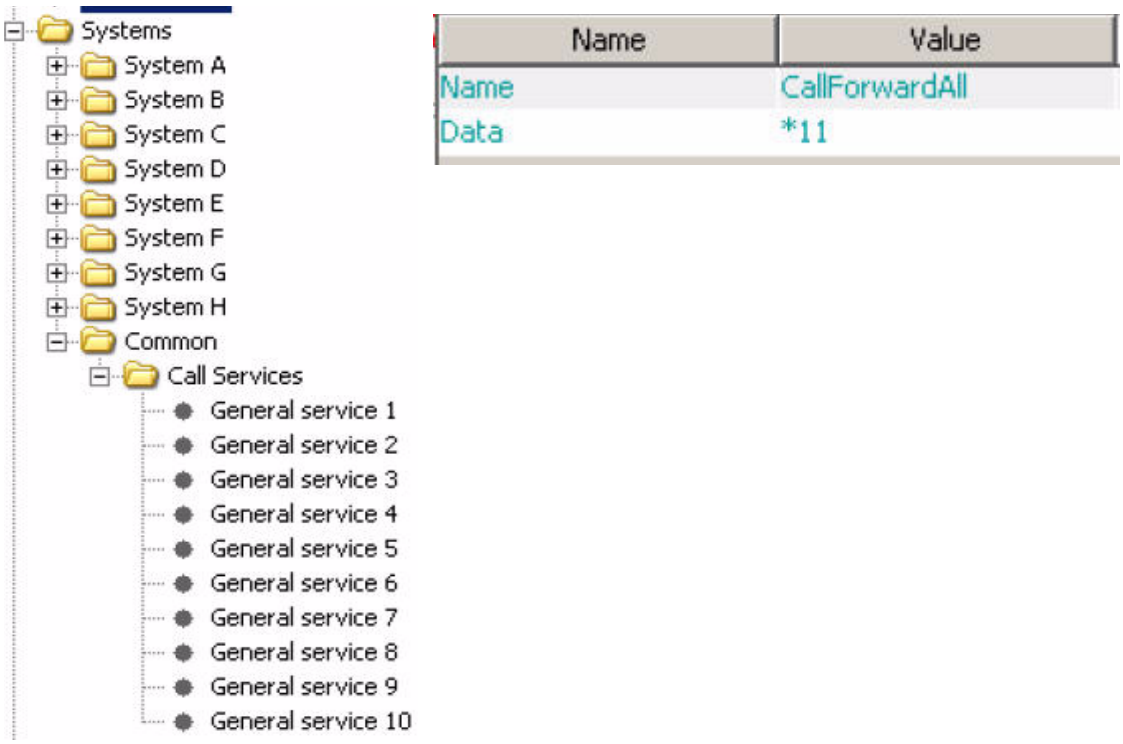
The menu is described in *User Manual, Avaya 3725 telephone.*

Besides the default Call services functions, it is possible to define 10 extra system-specific call services by codes. The codes can be programmed with pause (P) and auto disconnection (H = Hook). Both Name and Data must be defined for the option to be displayed. Possible values: Digits 0-9, #, *, 'P' – pause, H – hook.

The programming of the menu is done with PDM or AIWS. For instructions on how to edit parameters with PDM, see Edit Parameters *on page 259*, or with AIWS see Edit Parameters on page 334.

Using the PDM and the "Edit template" feature, the parameter can be found at **Systems** > **Common** > **Call Services** > **General Service X**.

Figure 32: Examples for Call services settings



Note:

Changing the language on the telephone will not affect the Call services menu entries. The text entered in PDM/AIWS will not be changed.

In Call Menu

In Call Menu is a configurable menu in the telephone. The setting for the incall menu entries are system dependent! The purpose of the In Call Menu is to provide a user friendly access to system dependent functionality during a call such as:

- Start a New Call during Conversation
- Switch between Calls
- End a Call
- Transfer a Call
- Transfer to new Call
- Make Conference Call
- Activate Call Back
- Sending Call Waiting

Note:

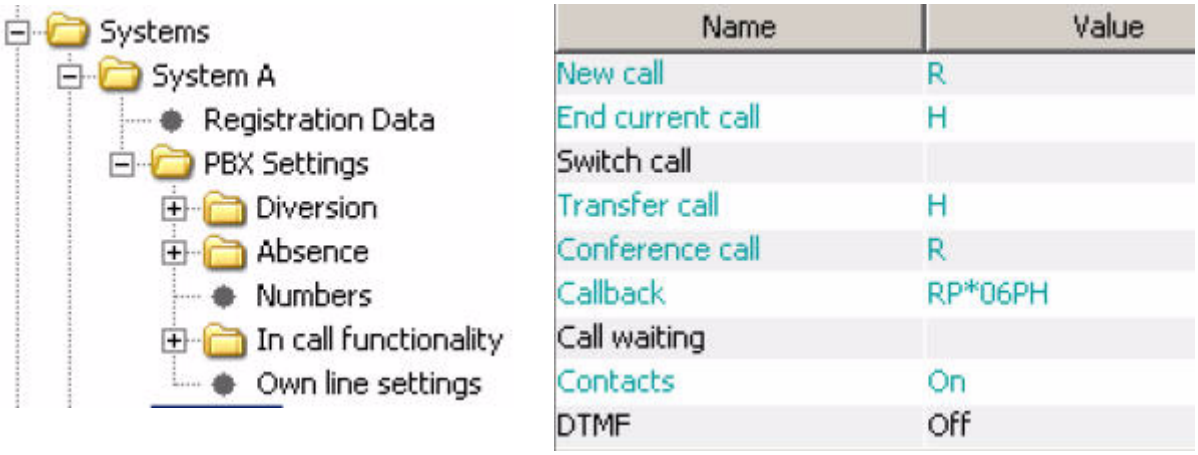
The “Transfer to a new call” option will be visible in the telephone when the parameters "Transfer call" and "New call" are set.

The menu is described in *User Manual, Avaya 3725 telephone*.

The programming of the menu is done with PDM or AIWS. For instructions on how to edit parameter with PDM, see Edit Parameters *on page 259*, or with AIWS see Edit Parameters on page 334.

Ask your supplier for example templates that will configure In Call Menu for your PBX.

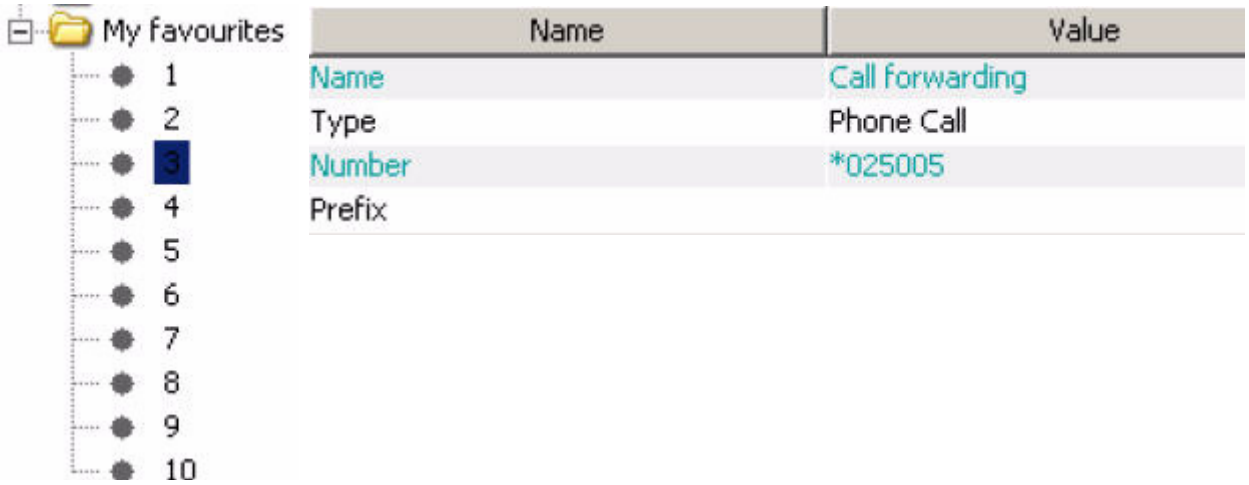
Figure 33: Examples for In Call Menu settings



My Favourites

Entries in the **My Favorites** can be used similar as the **Call Service** menu. They can be configured by the user itself. Additionally it is possible to configure a short cut to open the **My Favorites** menu or to assign a **My Favorites** entry directly to a short cut. The settings in the **My Favorites** are system dependent.

Figure 34: Examples for My Favourites



Own Line Settings

Use the Own Line Settings when you want to use the same phonebook in different systems and in different countries.

The own line settings enables:

- Calling numbers stored with a "+" sign for the international access code. The same phonebook can be used in different countries.
- Recognizing incoming internal or external calls as numbers stored on international format in the phonebook. The same phonebook can be used in different systems.

In order for this feature to work, numbers must be stored in the phonebook in international format with a "+" sign for the international access code. Also, the Own Line parameters must be configured with the PDM/AIWS.

For instructions, see Installing and operating the Portable Device Manager (PDM) on page 239, or Installing and operating AIWS on page 289.

Uploadable Language

It is possible to upload *one additional* language to the telephone. The language file is generated via an Excel file. The Excel file used to generate language files is delivered from your supplier.

Note:

If another language file is uploaded, the first additional language is overwritten.

Certain special characters are allowed when generating the language file, see information in the Excel file.

To upload an additional language, the PDM or the Device Manager in the AIWS is used, go to the **devices** tab and select ***device(s)***. In the Device menu, select **Upload language**.

A parameter can be altered to match the uploaded language. The parameter controls:

- The characters available for text input.
- The sort order in the phonebook.

See also on the PDM, Upload a Language on page 272, or the AIWS, Installing and operating AIWS on page 289.

Customize the GUI

This feature is included in 3725, not in 3720.

It is possible to customize the telephone Graphical User Interface (GUI) by turning certain menus On or Off. This is done in the PDM/AIWS by editing a template (or a Number setting) for the corresponding portable (or Number).

The path to these settings in the template depends on the version of the parameter definition file (.def). In the current version the path is:

Customization > **Visibility** > ***X***

where "X" can be Messaging, Favourites, etc.
The parameters are found under "X".

The settings for the parameters may have three alternatives, such as:

- Show
- Hide all
- Hide admin (All settings can be viewed but not modified by the telephone user)

Clear Lists when inserted in Charger

The telephone can be configured to clear lists when placed in a charger. The following lists will then be cleared:

- Inbox (only 3725)
- Unsent (only 3725)
- Sent (only 3725)
- Call list
- Missed calls

Note:

Both call lists and message lists will be cleared.

Using the PDM/AIWS and the **Edit template** feature, the parameter can be found at **Connections** > **In_Charger** > **Clear_Lists_In_Charger** in a template or parameter definition file (.def).

The default setting for **Clear list in charger** is **Off**. The feature is activated by changing the parameter value to **On**. When the feature is enabled, the lists are cleared when the telephone is placed in the charger.

Disable Homebase GAP Registration

This shall not be activated if the telephone is used in an Integral 5 system.

When the feature is enabled, it is not possible to register to a home base.

Using the **Edit template** feature in the PDM/AIWS, the parameter can be found at **Systems** > **Home_Base_Subscription**.

The parameter shall be set to **Enable** for registration of a new base station. The default value is **Disable**.

Require Encrypted Base Station

The telephone can be configured to establish calls via encrypted base stations only. So the handset will prevent unencrypted calls. This setting can be used to avoid snooping in the telephony network. If the setting is active, the encryption needs to be enabled in the base station. See corresponding manual for the base station.

Using the "Edit template" feature in the PDM, the parameter can be found at **Systems** > **Encryption required**. When the parameter is set to **Yes**, it is only possible to establish calls via encrypted base stations. The default value is **No**.

Note:

In the IP-DECT R4 system, the air interface of all base stations is encrypted. For ISDN DECT, only RM627/RM637 supports encryption that needs to be enabled via the ISM/ISA tool. Do not set this parameter in installations with RM588, RM603, and RM617.

Out of range beep

The behaviour of the handset when moving out of coverage area of the connected DECT system can be configured at **Settings** > **Sound and Alerts** > **Out of range alert**. The handset can either be silent when loosing the system or do a single beep or beep every minute for the next 30 minutes to alert the user that the system is out of range.

Handset Idle Roaming

It is recommended to set the new parameter **Location** > **Base station positioning** to **Off**. Otherwise there will be a strange roaming behaviour in the handset that could cause some undefined side effects. Additionally, the battery standby time will be reduced if the parameter is set to **On**.

This parameter was introduced for the hotfix Version 2.8.30 in the 3725 Handset only to improve the idle roaming behaviour in this load as a short-term fix. The handset will search every few seconds for the IPBS with the best signal strength. In later handset releases, a more optimized idle roaming behaviour was introduced, which is always active (for 3720 as well) and has much less impact on the battery standby time. The parameter has to be kept in the parameter definition to be able to set it to **Off** in case of updating the handset from the hotfix release 2.8.30 to a later release where this parameter is not needed anymore.

Site Survey Tool

This feature is included in 3725, not in 3720.

Protect registration from user deletion

It is possible to protect or unprotect a registration from deletion via the telephone menu by altering the parameter “Protected flag”. In a template/Number in PDM/AIWS, the parameter is found at **Systems > System X > Registration data**.

Emergency Call Number

This is a phone number for emergency calls. It is always possible to call this number, regardless of whether phone-lock or key-lock are active or not. The Parameter is found in a template/ Number in PDM/AIWS in the **Settings** folder.

Audio adjustment

It is possible to adjust the side tone level, i.e. how much of the speakers voice that is fed back to the speaker. The side tone level is set via PDM by adjusting the parameter:

Audio > Normal > Normal side tone adjustment

The parameter affects the “normal” mode, i.e. not wired headset, not Bluetooth headset and not the handsfree/loudspeaking mode.

For configuration of headset audio see, Headset configuration on page 167.

Note:

Changing this parameter may result in lower sound quality and high sound level. Evaluate carefully before applying.

Headset configuration

A headset is recommended if you frequently use the telephone and/or want to have both hands free. The headset comes in two versions; microphone integrated in the cable, and microphone on a boom.

In order to achieve optimal audio quality with the different headset types, it is recommended to set the corresponding headset profile.

The default setting is "microphone on a boom," which means that the audio is optimized for using a headset with microphone on a boom. The headset profile can be changed in the telephone menu or in a template/Number via PDM/AIWS in:

Connections > Headset > Headset type

If the preconfigured headset profiles does not match the headset or the audio performance is bad, it is possible to configure a headset profile. In PDM/AIWS, this is done under:

Connections > Headset > Headset type > User headset profile

When a name has been configured for the profile it will be visible and selectable in the telephone menu.

The following parameters can be set:

- microphone gain
- speaker gain

Note:

Changing these parameters may result in a very high sound level which can cause hearing damage.

Note:

Changing these parameters may result in lower sound quality such as noise and echo. If audio problems occur, it is noticeable for the person listening on the conversation. Evaluate carefully before applying.

Owner identification in the idle display.

It is possible to add owner identification in standby mode of the telephone. In a template or Number in PDM/AIWS, the parameter is found at:

Settings > Owner ID

Note:

It is also possible to configure the Owner ID via the telephone menu. See *User Manual, Avaya 3725 telephone*.

Profiles

This feature is included in 3725, not in 3720.

It is possible to set up an own profile for incoming calls, message alerts, vibrating alerts, key sound etc. This can be useful when there are many users on the same telephone, and they want different sound profiles. It can also be used for temporarily settings, for example while in a meeting, incoming calls should be silent.

Profiles are configured via parameters in the **Profiles** folder.

Note:

It is also possible to configure profiles via the telephone menu. See *User Manual, Avaya 3725 telephone*.

Import Contacts

It is possible to import a phonebook file (that is, local phonebook) to a telephone. The phonebook file is a tab-separated .txt file, and contains two items per row, number and name. The PDM is used to import the phonebook file to the handset.

For more information, see Import Contacts on page 264.

See also Central Phonebook on page 159 and Company Phonebook on page 159.

Shortcuts

This feature is included in 3725, not in 3720.

One click access to predefined functions can be configured for the Soft keys, Hot keys, Navigation keys, and the Multi-function button. It is for example possible to define the soft key to make a call.

Shortcuts are configured via parameters in the **Shortcuts** folder.

Note:
When programming Soft keys both name and function must be set.

Note:
It is also possible to configure shortcuts via the telephone menu. See *User Manual, Avaya 3725 telephone*.

Administration

Admin Menu Tree

The telephone has a hidden menu for system administrators. The Admin menu contains:

- Software and hardware information, IPDI and IPEI
- DECT link and system information
- Centralized Management status
- Site survey tool (not included in 3720)
- Fault logging
- Enhanced system menu with ability to alter protection
- Factory reset option

To activate the Admin menu, enter **Settings > Device info > Software** and press the buttons containing **CRAFT#**, that is **27238#**.

n

Note:

Once the Admin menu was activated by "CRAFT" a new menu entry **Admin menu** will appear in the **Settings** menu. So you can easily enter the admin menu again without typing "CRAFT". The new menu entry can be deleted by a restart of the telephone.

Note:

Never enter **Craft#** in the **Settings >Admin menu > Device info >Software** menu to activate the admin menu again, even it is already active. The telephone can get stuck.

The following table shows the menu tree for the Admin menu in 3725. Other menus are described in *User Manual, Avaya 3725 telephone*, and *User Manual, Ayava 3720 telephone*.

Admin Menu in 3725

Device info	>	Software		
		Hardware		
		IPEI/IPDI		
		User ID		
DECT info		Link		

Admin Menu in 3725 (continued)

		System		
Centr. Management[1]				
Site survey tool		Link		
	>	HO & roam beep	>	On/Off
		Range beep	>	On/Off
		Error rate beep	>	On/Off
		Set range (-dbm)	>	<Value>
		Set error rate (f/s)	>	<Value>
		Show RFPs	>	All RFPs
				Selected RFPs
				All except selected
				Residential RFPs
Logging	>	No. of events		
		Restart reason		
System	>	Change system	>	Automatically
				<System>
				...
		Subscribe	>	• Next
		Unsubscribe	>	<System>
		Rename system	>	<System>
		Priority	>	<System>
		Protection	>	<System>
Frequency band (see important note)	>	Default EU US China (autodetect)		
		LA (Latin America)		
		Brazil		
Factory Reset				

1. Centr. Management shows the status of the handset for the maintenance:
   DECT: over the air status
   Eth/USB: DC4/RC3 status
   Firmware download status

Important:
The Frequency Band selection is only available in a factory fresh handset or after a factory reset. **This setting can never be changed if it was done once. A wrong configuration will result that the handset will not operational anymore and needs to be sent back to the Avaya repair center.** The default setting is "EU US China" what will result in a auto detect mode for the different frequency bands. This setting needs only to be changed for users in Latin America and Brazil.

Quick Access to the telephone's Device Information/SST Menu

For quick access to device information, short codes can be used in the idle menu. To display this information, enter the following codes in the telephone.

Information	Code
Software version	*#34#
Hardware version	*#34#
IPEI	*#34# or *#06#
IPDI	*#34# or *#06#
User ID	*#34#
Open Site Survey tool menu	*#77#

LED indications

The following table shows the LED indications that are used for 3725/3720.

LED indication	Description
None	Switched off.
Green, fixed	Telephone fully charged and in charger.
Green, flashing	Switched on, but not in charger.
Orange, fixed	Charging.

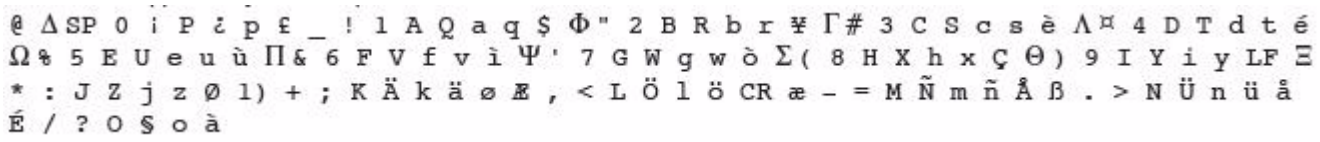
Orange, flashing (1000 ms on, 1000 ms off)	Software download.
Orange, flashing (100 ms on, 800 ms off)	“Change phone” indication during Easy Replacement.
Red, fixed	Software error. Service needed.
Red, flashing (100 ms on, 800 ms off)	Error indication during Easy Replacement. Put back old portable in charger.
Red, flashing (800 ms on, 100 ms off)	Error during Easy Replacement. Service needed for *both* portables.

See also LED indications in Easy Replacement on page 153.

Characters for SMS

For SMS from handset to handset only the following characters will be supported by the SMS protocol:

Figure 35: SMS Characters



Troubleshooting

See Avaya 3720/3725 DECT Telephones on page 500.

Configuring Avaya Aura™ Communication Manager

General usage and Important Notes

For releases before Avaya Aura™ Communication Manager (Communication Manager) 6.0 the special application SA8567- PHS X-Station Mobility over IP is mandatory to be installed to enable the IP-DECT capability on Communication Manager. Since Communication Manager 6.0 IP DECT is part of the general Communication Manager features, hence SA8567 is not available any more.

The communication between the Communication Manager and the IP-DECT system is done via IP-Trunks using the H.323/X-Mobile protocol. One or more fixed IP trunk connections are required between an IPBS Master and Communication Manager. The Radio IPBS are controlled by the IPBS Master, they do not register to the Communication Manager system.

Several Master IPBS can be connected to the Communication Manager building one common IP-DECT system while one main Master IPBS holds the DECT user database. Users can roam between these IP-DECT masters using one single subscription with the system.

A separate IPBS Master needs to be configured for a site which has survivability for the Communication Manager system. The primary trunks of this IPBS master will be configured to the Communication Manager in the main location. Redundant trunks will be configured to the local LSP that will take over if the connection to the main location fails. This LSP can only take over if the main location uses PE (processor ethernet) for the trunk connection to the Master IPBS (This requires Communication Manager 5.2 or higher).

For DECT R4 users the same features are available as for DECT R2 and previous IP DECT users. The available features and feature operation is the same as for analog station users, but interactions with Multiple Locations feature set is limited. Roaming users have to follow the actual location rules for dialing and for feature activation/deactivation.

Since Communication Manager 4.0.3 and Communication Manager 5.1 the optional feature Location Based Routing for IP-Trunks was introduced which is important for Multi-Location configuration. For Communication Manager versions below Communication Manager 6.0 the SA field SA9004 - Location Based Routing for IP-Trunks on page 7 of the system-parameters special-applications form needs to be enabled. Since Communication Manager 6.0 Location Based Routing for IP-Trunks is part of the general Communication Manager features, hence SA9004 is not available any more.

The Avaya 3720/3725 user should use FACs (feature access codes), programmed via PDM for in-call menu and/or call services menu in the phone for activating/deactivating Communication Manager features if the station's COS has the Console Permission turned off (set to ’n’).

Communication Manager system administration

The configuration and administration for IP-DECT on Communication Manager 6.0 is now part of the Communication Manager documentation. So please refer the following documents:

- Avaya Aura™ Communication Manager Feature Description and Implementation
- Administering Avaya Aura™ Communication Manager
- Avaya Aura™ Communication Manager Screen Reference

For previous versions of Avaya Communication Manager as Communication Manager 3.1, Communication Manager 4 and Communication Manager 5 you can find the system administration described below.

The required settings for DECT R4 are highlighted in the screenshots. All other settings in the screenshots are only exemplary and dependent on the customer demands. Changing all of them to the screenshot values could cause some trouble.

The special application SA8567 and optional SA9004 needs to be enabled in the license file:

For Communication Manager 4 and Communication Manager 5

```
display system-parameters special-applications                  Page   4 of   7
                              SPECIAL APPLICATIONS

     (SA8481) - Replace Calling Party Number with ASAI ANI? n
                (SA8500) - Expanded UUI Display Information? n
                  (SA8506) - Altura Interoperability (FIPN)? n
                 (SA8507) - H245 Support With Other Vendors? n
                 (SA8508) - Multiple Emergency Access Codes? n
  (SA8510) - NTT Mapping of ISDN Called-Party Subaddress IE? n
                       (SA8517) - Authorization Code By COR? n
    (SA8518) - Automatic Callback with Called Party Queuing? n
           (SA8520) - Hoteling Application for IP Terminals? n
   (SA8558) - Increase Automatic MWI & VuStats (S8700 only)? n
              (SA8567) - PHS X-Station Mobility over IP? y
        (SA8569) - No Service Observing Tone Heard by Agent? n
                  (SA8573) - Call xfer via ASAI on CAS Main? n
            (SA8582) - PSA Location and Display Enhancements? n
                 (SA8587) - Networked PSA via QSIG Diversion? n
                           (SA8589) - Background BSR Polling? n
     (SA8608) - Increase Crisis Alert Buttons (S8700 only)? n
                        (SA8621) - SCH Feature Enhancements? n
```

Since Communication Manager 4.0.3 and Communication Manager 5.1

```
Change system-parameters special-applications                    Page 7 of 7
                            SPECIAL APPLICATIONS

                      (SA8896) - IP Softphone Lamp Control? n
                  (SA8911) - Expanded Public Unknown Table? n
       (SA8917) - LSP Redirect using special coverage point? n
      (SA8928) - Display Names on Bridged Appearance Labels? n
             (SA8931) - Send IE with EC500 Extension Number? n
           (SA8944) - Multiple Logins for Single IP Address? n
  (SA9004) - Multi-Location Call Routing for IP-Trunk? n
```

Configure maximum number of DECT R4 X-Mobile stations

It's not possible to configure X-Mobile DECT stations if the max number is set to 0. If the special application SA8567 is not available the number of XMOBILE stations will remain 0.

For Communication Manager 4

```
display system-parameters customer-options                      Page   1 of  11
                              OPTIONAL FEATURES

    G3 Version: V14
      Location: 2                            RFA System ID (SID): 1
      Platform: 7                            RFA Module ID (MID): 1

                                                              USED
                                Platform Maximum Ports: 900   69
                                      Maximum Stations: 450   7
                           Maximum XMOBILE Stations: 100      18
                    Maximum Off-PBX Telephones - EC500: 0     0
                    Maximum Off-PBX Telephones -   OPS: 0     0
                    Maximum Off-PBX Telephones - PBFMC: 0     0
                    Maximum Off-PBX Telephones - PVFMC: 0     0
                    Maximum Off-PBX Telephones - SCCAN: 0     0




        (NOTE: You must logoff & login to effect the permission changes.)
```

Configure the node name and IP-Address for the IP-DECT system

This is the name and IP-Address of the DECT R4 system (Master IPBS).

For Communication Manager 4 and Communication Manager 5

```
display node-names ip
                                  IP NODE NAMES
    Name              IP Address
ACommunication Manager2               192.168.0.1
Master IPBS         192.168.0.104
default             0.0.0.0
procr               192.168.0.200




( 4 of 4 administered node-names were displayed )
Use 'list node-names' command to see all the administered node-names
Use 'change node-names ip xxx' to change a node-name 'xxx' or add a node-name
```

Configure the codec used for the selected network region

A codec-set supported by IPBS and **Media Encryption** none is required, the "Far-end Network Region" that has to be configured in the signaling-group will be linked to this codec.

IPBS codec support:

- G.711 A-law (64kbps) – 20 and 30 ms packets
- G.711 µ-law (64kbps) – 20 and 30 ms packets
- G.723.1 (5.3 kbps) – 30 and 60 ms (Not supported with Avaya G450 Gateway)
- G.729A (16 kbps) - 20, 30, 40, 50, and 60 ms

For Communication Manager 4 and Communication Manager 5

```
display ip-codec-set 1                                          Page   1 of   2

                         IP Codec Set

   Codec Set: 1

   Audio          Silence      Frames   Packet
   Codec          Suppression  Per Pkt  Size(ms)
 1: G.711MU          n           2         20
 2:
 3:
 4:
 5:
 6:
 7:


    Media Encryption
 1: none
 2:
 3:
```

```
display ip-network-region 1                                   Page   1 of  19
                              IP NETWORK REGION
  Region: 1
Location:         Authoritative Domain:
    Name:
MEDIA PARAMETERS                Intra-region IP-IP Direct Audio: yes
      Codec Set: 1              Inter-region IP-IP Direct Audio: yes
   UDP Port Min: 2048                     IP Audio Hairpinning? n
   UDP Port Max: 3329
DIFFSERV/TOS PARAMETERS                 RTCP Reporting Enabled? y
 Call Control PHB Value: 46      RTCP MONITOR SERVER PARAMETERS
        Audio PHB Value: 46       Use Default Server Parameters? y
        Video PHB Value: 26
802.1P/Q PARAMETERS
 Call Control 802.1p Priority: 6
        Audio 802.1p Priority: 6
        Video 802.1p Priority: 5      AUDIO RESOURCE RESERVATION PARAMETERS
H.323 IP ENDPOINTS                                      RSVP Enabled? n
  H.323 Link Bounce Recovery? y
 Idle Traffic Interval (sec): 20
   Keep-Alive Interval (sec): 5
            Keep-Alive Count: 5
```

```
display ip-network-region 1                                   Page   3 of  19

                   Inter Network Region Connection Management

 src dst codec direct   WAN-BW-limits   Video                          Dyn
 rgn rgn  set   WAN  Units    Total Norm  Prio Shr Intervening-regions  CAC IGAR
 1   1    1
 1   2    1     y    NoLimit                                           n
 1   3
 1   4
 1   5
 1   6
 1   7
 1   8
 1   9
 1   10
 1   11
 1   12
 1   13
 1   14
 1   15
```

Configuring the dial plan

The TAC you enter on the **Trunk Group** screen must match the format you have administered for a DAC on the **Dial Plan Analysis Table.**

For Communication Manager 4 and Communication Manager 5

```
display dialplan analysis                                    Page   1 of  12
                          DIAL PLAN ANALYSIS TABLE
                                                          Percent Full:    0

      Dialed   Total  Call    Dialed   Total  Call     Dialed   Total  Call
      String   Length Type    String   Length Type     String   Length Type
       0          1   fac
       1          3   ext
       2          4   ext
       3          4   ext
       4          4   ext
       5          4   ext
       9          3   dac
       *          3   fac
       #          3   fac
```

Configuring the signaling group

The IP trunk's signaling group needs to have the node name of the Master IPBS as **Far-end Node Name**.

There is a strong linkage between the **signaling group** and the related **trunk group**. When creating the signaling group before the trunk group is available, the fields **Trunk Group for NCA TSC**, **Trunk Group for Channel Selection**, and **X-Mobility/Wireless Type** have to be left **blank**. After the trunk group is created change the **Trunk Group for NCA TSC**, **Trunk Group for Channel Selection** to the number of the new trunk group and **X-Mobility/Wireless Type** should be **DECT**.

The **Near-end Listen Port** needs to match the Master IPBS IP Trunk setting "CS Port". The **Far-end Listen Port** needs to match the Master IPBS Trunk setting "**Local Port**".

Max number of NCA TSC and **Max number of CA TSC** should be set to 1 or higher. The Enable Layer 3 Test should be set to "y" for IP trunk supervision.

For Communication Manager 4

```
display signaling-group 9                                    Page   1 of   5
                                SIGNALING GROUP

 Group Number: 9                Group Type: h.323
                             Remote Office? n          Max number of NCA TSC: 1
                                       SBS? n           Max number of CA TSC: 1
          IP Video? n                                Trunk Group for NCA TSC: 9
 Trunk Group for Channel Selection: 9          X-Mobility/Wireless Type: DECT
     TSC Supplementary Service Protocol: a           Network Call Transfer? 1
                          T303 Timer(sec): 10

   Near-end Node Name: procr                 Far-end Node Name: Master IPBS_110
Near-end Listen Port: 6000                          Far-end Listen Port: 6000
                                                    Far-end Network Region: 1
        LRQ Required? n                  Calls Share IP Signaling Connection? n
        RRQ Required? n
    Media Encryption? n                       Bypass If IP Threshold Exceeded? n
                                                      H.235 Annex H Required? n
        DTMF over IP: out-of-band              Direct IP-IP Audio Connections? y
Link Loss Delay Timer(sec): 90                           IP Audio Hairpinning? n
Enable Layer 3 Test? y                        Interworking Message: PROGress
                                            DCP/Analog Bearer Capability: 3.1kHz
```

Since Communication Manager 4.0.3 and Communication Manager 5.1

The **Location for Routing Incoming Calls** parameter is only visible when SA9004 field is ON and group type is H323. The setting for **Location Routing Inc Calls** provides the location from where the call is being initiated over the Signaling Group. If "Location Routing Inc Calls" field of Signaling Group is blank (default value), the location of CLAN's cabinet or the location of the Processor Ethernet (PE) is is taken for routing the call, depending on whether CLAN or PE is being used to carry that H.323 signaling channel.

.

```
 Page   1 of   5
                              SIGNALING GROUP

 Group Number: 110            Group Type: h.323
                          Remote Office? n          Max number of NCA TSC: 5
                                   SBS? n           Max number of CA TSC: 5
         IP Video? n                             Trunk Group for NCA TSC: 110
Trunk Group for Channel Selection: 110     X-Mobility/Wireless Type: DECT
      TSC Supplementary Service Protocol: a
T303 Timer(sec): 10                          Location Routing Inc Calls? xxx
H.245 DTMF Signal Tone Duration(msec):
Near-end Node Name: aled-S85_CLAN_1       Far-end Node Name: Master IPBS
 Near-end Listen Port: 5210               Far-end Listen Port: 5210
                                       Far-end Network Region: 1
        LRQ Required? n               Calls Share IP Signaling Connection? n
        RRQ Required? n
    Media Encryption? n                     Bypass If IP Threshold Exceeded? n
                                                    H.235 Annex H Required? n
        DTMF over IP: out-of-band           Direct IP-IP Audio Connections? y
 Link Loss Delay Timer(sec): 90                       IP Audio Hairpinning? n
 Enable Layer 3 Test? y                     Interworking Message: PROGress
                                     DCP/Analog Bearer Capability: 3.1kHz
```

Configuring the signaling group for LSP setup

After adding first page of the signaling group on the main server (as mentioned in the heading **Configuring the signaling group**), now go to the page-2 of the signaling group and configure the page as below.

Note:

Note: Below page will display only with Communication Manager 5.2 or later version and with PE configuration only.

```
change signaling-group 2                                      Page   2 of 6

                LIMIT SIGNALING GROUP USAGE
             Enable on the main Processor(s)? y
           Enable on Survivable Processors (ESS and LSP): all
```

Configuring the trunk group

Set for the **Signaling Group** the related **signaling group** number used for DECT R4 trunk or if the Member Assignment Method is manual, the related Signaling Group has to be set for each trunk group member.

Set the TAC (Trunk Access Code) according to the dialplan analysis table for a DAC (Dial Access Code), same first digits (dialed string) and same total length.

The Incoming Digit Handling for the IP trunk should support overlap:

For Communication Manager 4 and Communication Manager 5

```
display trunk-group 9                                        Page   1 of  21
                                TRUNK GROUP

Group Number: 9                    Group Type: isdn          CDR Reports: y
  Group Name: IP_DECT_Trunk               COR: 1        TN: 1        TAC: 909
   Direction: two-way        Outgoing Display? n         Carrier Medium: H.323
 Dial Access? y              Busy Threshold: 255  Night Service:
Queue Length: 0
Service Type: tie                    Auth Code? n
                                             Member Assignment Method: auto
                                                      Signaling Group: 9
                                                    Number of Members: 10
```

```
display trunk-group 9                                        Page   2 of  21
      Group Type: isdn

TRUNK PARAMETERS
         Codeset to Send Display: 0   Codeset to Send National IEs: 6
                                        Charge Advice: none
Supplementary Service Protocol: a Digit Handling (in/out): overlap/enbloc
       Digit Treatment:                                      Digits:

                                                  Digital Loss Group: 18
Incoming Calling Number - Delete:     Insert:                 Format:

 Disconnect Supervision - In? y  Out? v
 Answer Supervision Timeout: 0
                                  CONNECT Reliable When Call Leaves ISDN? n
```

```
display trunk-group 9                                        Page   3 of  21
TRUNK FEATURES
          ACA Assignment? n            Measured: none
                                Internal Alert? n        Maintenance Tests? y
                              Data Restriction? n     NCA-TSC Trunk Member: 1
                                    Send Name: n Send Calling Number: y
            Used for DCS? n                              Send EMU Visitor CPN? n
   Suppress # Outpulsing? y   Format: unk-pvt
                                          UUI IE Treatment: service-provider

                                             Replace Restricted Numbers? n
                                           Replace Unavailable Numbers? n
                                              Send Connected Number: y
Network Call Redirection: none                 Hold/Unhold Notifications? n
              Send UUI IE? y                 Modify Tandem Calling Number? n
                Send UCID? n
 Send Codeset 6/7 LAI IE? y
```

```
display trunk-group 9                                        Page   4 of  21
                       QSIG TRUNK GROUP OPTIONS









                              SBS? n
                  QSIG Value-Added? n
```

```
display trunk-group 9                                          Page   5 of  21
                                TRUNK GROUP
                                     Administered Members (min/max):   1/10
GROUP MEMBER ASSIGNMENTS                 Total Administered Members:  10

       Port              Name        Night
  1: T00051              IP_DECT_Tr
  2: T00052              IP_DECT_Tr
  3: T00053              IP_DECT_Tr
  4: T00054              IP_DECT_Tr
  5: T00055              IP_DECT_Tr
  6: T00056              IP_DECT_Tr
  7: T00057              IP_DECT_Tr
  8: T00058              IP_DECT_Tr
  9: T00059              IP_DECT_Tr
 10: T00060              IP_DECT_Tr
 11:
 12:
 13:
 14:
 15:
```

Configure the station

The DECT station administration **Type** should be XMOBILE, the **XMOBILE Type** is DECT and the **Configuration Set** should be blank. The Avaya 3720/3725 DECT sets support ICON Message Waiting therefore **Message Lamp Ext** has to be set to the station number and **Length of Display** is 16x2. For the **Mobility Trunk Group** select the appropriate Trunk group. **Cell Phone Number** needs to be set to the station number and **Mapping Mod**e to both.

Note:

If the feature "Redirect in charger" should be used, in Page 3 of 4 **No Reply For Internal/External Calls** has to be set to **Y**.

For Communication Manager 4 and Communication Manager 5

```
display station 5012                                        Page   1 of   4
                                    STATION

Extension: 5012                       Lock Messages? n              BCC: 0
  Type: XMOBILE                      Security Code:                 TN: 1
                                    Coverage Path 1:                COR: 1
     Name: IPDECT 5012              Coverage Path 2:                COS: 1
                                    Hunt-to Station:
STATION OPTIONS
                                        Time of Day Lock Table:

  XMOBILE Type: DECT                        Message Lamp Ext: 5012
         Display Module? y                Message Waiting Type: ICON
       Display Language: english          Length of Display: 16x2
    Mobility Trunk Group: 9                     Calls Allowed: all
       Configuration Set:

 CELL PHONE NUMBER MAPPING
             Dial Prefix:
       Cell Phone Number: 5012
            Mapping Mode: both
```

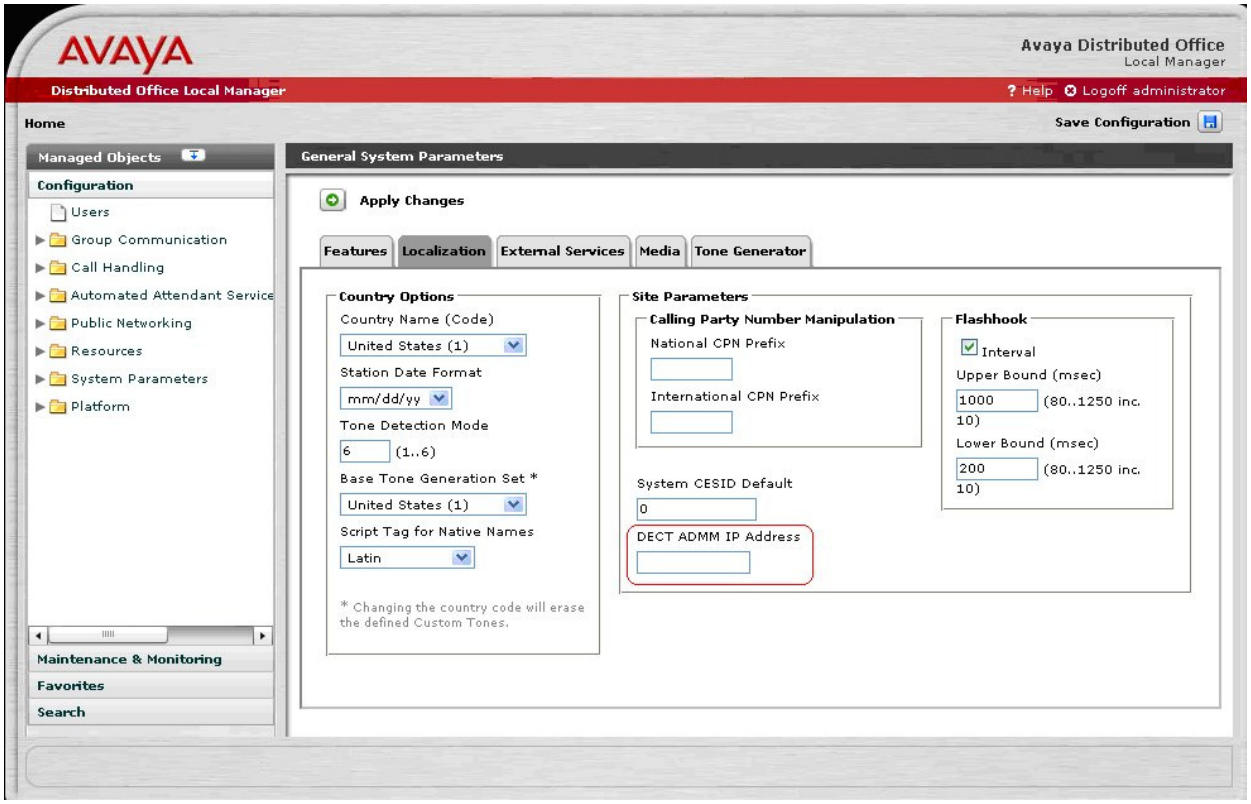
```
display station 5012                                          Page   2 of   4
                                    STATION
FEATURE OPTIONS
           LWC Reception: spe
          LWC Activation? y
  LWC Log External Calls? n
             CDR Privacy? n                              Data Restriction? n
                                                  Call Waiting Indication: y
                                              Att. Call Waiting Indication: y
   Bridged Call Alerting? y                      Distinctive Audible Alert? y
        Switchhook Flash? y

                                    Per Station CPN - Send Calling Number?
       Service Link Mode: as-needed
         Multimedia Mode: basic                    Audible Message Waiting? y
    MWI Served User Type:
              AUDIX Name:
                                                Coverage After Forwarding? s
                                                  Multimedia Early Answer? n

  Emergency Location Ext: 5012
```

```
display station 5012                                          Page   3 of   4
                                    STATION


Bridged Appearance Origination Restriction? n




                             ENHANCED CALL FORWARDING
                                    Forwarded Destination         Active
 Unconditional For Internal Calls To:                                n
                   External Calls To:                                n
          Busy For Internal Calls To:                                n
                   External Calls To:                                n
      No Reply For Internal Calls To:                                n
                   External Calls To:                                n
```

```
display station 5012                                          Page   4 of   4
                                    STATION

                                                            Headset? n
                                                            Speaker? n
                                                           Mounting: d
      Floor:                                          Cord Length: 0
   Building:                                            Set Color:




ABBREVIATED DIALING
     List1:                    List2:                     List3:

HOT LINE DESTINATION
         Abbreviated Dialing List Number (From above 1, 2 or 3):
                                                           Dial Code:

     Line Appearance: call-appr
```

Distributed Office (DO) / Communication Manager Branch Edition (Communication ManagerBE) System Administration

Start the Distributed Office Local Manager (DOLM) and set the Master IPBS IP address on the System Parameters > General > Localization tab under 'Site Parameters' **DECT ADMM IP Address**.



The rest of the installation of the IP DECT system is like installation for Communication Manager.

Installing and operating the Advanced Charger

Introduction

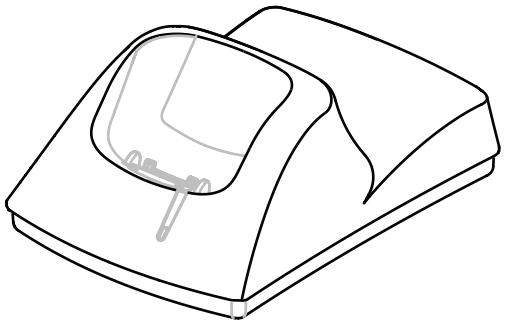
This chapter describes how to install, configure and operate the Advanced Charger. It is an advanced charger equipped with a USB port, making it possible to connect it directly to a PC for the purpose of upgrading or configuring the Advanced Charger itself or a cordless telephone placed in the charger. The Advanced Charger also has two Ethernet ports, enabling upgrading and configuring over a LAN of a cordless telephone placed in the charger.

The USB port is used to connect the Advanced Charger to a PC running the Portable Device Manager (PDM). This program can be used to upgrade the software and to configure parameters in the Advanced Charger as well as in a cordless telephone placed in the Advanced Charger.

The USB port is used when the Advanced Charger is connected to a PC running thePortable Device Manager (PDM). The PDM or the Avaya In-Building Wireless Server (AIWS) can be used to upgrade the software and to configure parameters in the Advanced Charger as well as in a telephone placed in the Advanced Charger.

The Advanced Charger supports easy replacement, that is replacement of a faulty telephone via the telephone display and does not involve PDM or AIWS.

Figure 36: Advanced Charger



The Ethernet ports makes it possible to connect several Advanced Chargers to the same LAN.

This chapter is intended as a guide for installation, maintenance, operation and troubleshooting purposes.

	Advanced Charger	Advanced Charger Adapter
Supply voltage	5 V DC	100 - 240 V AC, (50-60Hz)
Max current consumption when charging	2.0 A	0.4 A

Safety

The desktop charger adapter shall be connected to 100 - 240 V AC, 50 - 60 Hz. Therefore extra caution shall be taken during operation. The Advanced Charger itself is supplied with 5 V DC from the adapter.

Important:
Use only the power supply adapter delivered with the charger. Replacing with other power supply units means risk of battery explosion caused by too high input voltage or switched polarity. Supplying the charger with 5 V on opposite poles than intended is strongly forbidden.

Technical Solution

The following functionality is provided by the Advanced Charger:

- Provide a means for software and parameter update of cordless telephones.
- Charging of the battery of the telephone.
- Easy replacement

The Advanced Charger has one USB connection and two Ethernet connections. When using Ethernet connection it is possible to connect several Advanced Charger serially to the LAN.

If the Advanced Charger is connected towards PDM via both USB and Ethernet, the USB connection overrides the Ethernet connection.

Each Advanced Charger needs an IP address.

See label for MAC address.

Requirements

Computer:

- USB port. USB 1.1 required, USB 2.0 supported.
- Ethernet port 10/100 Mbit/s.
- Microsoft Windows XP or Microsoft Windows Vista.

Installation and Configuration

Advanced Charger Installation

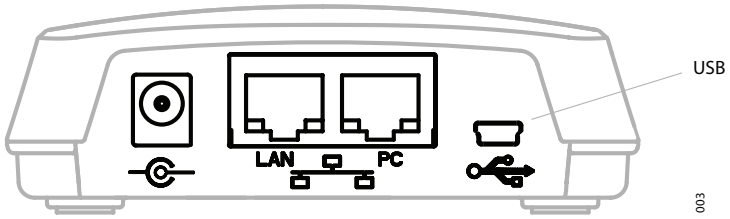
The chargers shall be placed in a dry environment with a temperature range from 5° C up to + 40° C.

Delivery includes:

- Advanced Charger
- Power Supply Cable (AC cord with corresponding wall plug)
- Power Supply adapter including DC cable
- USB cable

No tools are required.

Figure 37: Advanced Charger connections



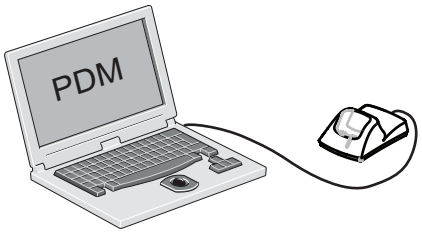
From left: DC power, Ethernet LAN, Ethernet PC and USB.

1. Connect the AC power supply cord to the adapter.
2. Connect the power supply cord to the wall socket.
3. Connect the DC cable to the charger. The charger LED indicates the status of the charger. See table in chapter Operation on page 203.
4. Connect the Advanced Charger to the pc with a USB or Ethernet cable.

One of the Ethernet connections is used for communication with a PC and the other can be used for LAN connection. Power over Ethernet is not supported.

The USB Interface supports USB 2.0 Full speed. One Mini-B Receptacle USB connector is used. The USB connection is used for communication with a PC. Power over USB is not supported.

Figure 38: Connection to PDM



Software installation

The charger is delivered with pre-installed software and it is possible to upgrade the charger software. Please see Software Update on page 202.

Advanced Charger Configuration

Each Advanced Charger need access to DHCP to receive an IP address automatically. If no DHCP is accessible it is possible to configure the IP address with PDM or AIWS.

If the Advanced Charger is configured to run DHCP, connect the network cable and the charger will automatically receive an IP address. If the charger is not configured to run DHCP the charger will use the setup IP addresses.

The following parameters exist for Advanced Charger and can be changed via PDM or AIWS:

Parameter	Description
Ethernet Bit rate[1]	auto (default)
Ethernet connector[1]	auto (default)
Ethernet duplex[1]	auto (default)
DHCP Enabled	Yes (default), No
Charger IP address[2]	192.168.0.101 (default)
Subnet mask	255.255.255.0 (default)
Default gateway IP address	192.168.0.1 (default)
DNS IP address	192.168.0.2 (default)
Charger IP port	12346 (default)
Service Discovery Enabled	Yes (default), No
Service Discovery Domain	Name of domain

DH IP address (one DH only)	192.168.0.3 (default)
DH IP port	10147 (default)

1. Currently only “auto” setting is available
2. The IP address is only valid if **DHCP Enabled** is set to "No".

Follow this instruction to set Advanced Charger parameters (it may be necessary to import a new parameter definitions file):

1. Check that the Advanced Charger is connected to PDM/AIWS.
2. In PDM or the device manager in AIWS, click on the **Numbers** tab.
3. Select the Advanced Charger device that you want to change parameters for.
4. In the Number menu, click **Edit...**.
5. Edit the parameters you want to edit.
6. Click **OK**.

Advanced Charger does not appear in AIWS

If the Advanced Charger does not appear in the AIWS Device Manager, the Service Discovery might not be working in the customers network setup.

In this case connect the Advanced Charger to PDM and edit the following parameters:

- *Service Discovery Enabled:* No
- *DH IP address (one DH only)*: Enter AIWS IP-Address

Note:

Service Discovery might not work if the Advanced Charger is not in the same subnet as the AIWS.

Security

(information regarding software security)

N/A

Commissioning

Follow these instructions to verify that the charging works.

1. Connect the charger according to chapter Advanced Charger Installation on page 198.
2. Place a telephone in the charging slot to start charging. The telephone indicates the charging progress, see respective user guide for details.

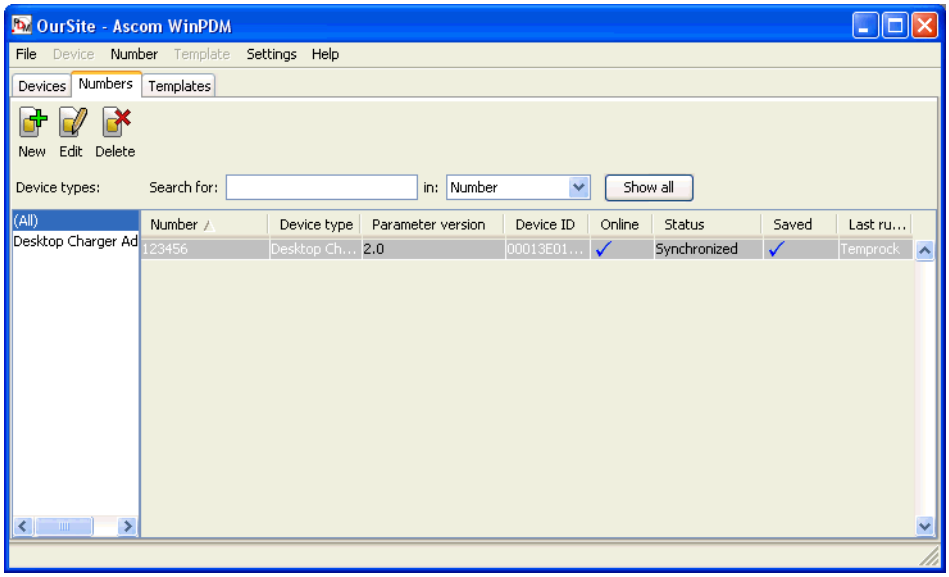
See figure 37 on page 198 to see the connections to the charger.

Follow these instructions to start PDM or AIWS.

In the case of Portable Device Manager (PDM):

1. Check that the charger is connected to your PC via USB.
2. Start PDM.
3. Go to the **Devices** tab and verify that the Advanced Charger is online.

Figure 39: Desktop Charger in PDM.


OurSite - Ascom WinPDM
File Device Number Template Settings Help
Devices Numbers Templates
New Edit Delete
Device types: Search for: in: Number Show all
(All)
Desktop Charger Ad
Number Device type Parameter version Device ID Online Status Saved Last ru...
123456 Desktop Ch... 2.0 00013E01... Synchronized Temprock

In the case of Avaya In-Building Wireless Server (AIWS):

1. Check that the charger is connected to the LAN.
2. Start AIWS.
3. Go to the **Devices** tab and verify that the Advanced Charger is online (it may take up to 15 s).

For instructions on how to verify that the charger parameter setting works, and for further instructions, please see Device Manager on page 322.

Maintenance

Software Update

The charger software is pre-installed. Updates can be performed by using PDM or AIWS. For PDM details see Upgrade a Device with new Software on page 274, or for AIWS details see Upgrade a Device with new Software on page 349.

Operation

Charger operation

Operation when charger is connected to power supply

When the charger is connected to external power supply, the following normal operation can be done:

Telephone charging

1. Connect the charger to the AC power supply.
2. Place a telephone in the charging slot to start charging.

Telephone disconnection

1. First, tilt the telephone forwards.
2. Then, lift the telephone upwards.

Note:
Do not try to lift the telephone upwards before tilting it forwards.

Easy Replacement

The Advanced Charger supports the Easy Replacement feature. Easy replacement is performed via the telephone display and does not involve PDM or AIWS. The Advanced Charger only needs a power connection to support easy replacement. A connection to PDM/WSM is not needed.
See the Configuration Manual for your cordless telephone for details.

Note:
The Advanced Charger software needs to be of version 1.3.7 or higher.

Operation when charger is connected to PDM/AIWS

When the charger is connected to a PDM/AIWS, the following additional operations can be done:

- Software upgrade (of charger or telephone)
- Parameter editing (of charger or telephone)
- Phonebook upload

- Language upload

See Installing and operating the Portable Device Manager (PDM) on page 239, or AIWS Device Manager on page 322 for details.

LED indications

The charger is equipped with a status LED. The following indications are used:

LED indication	Description
Green, fixed	Logged on to PDM/AIWS.
Orange, fixed	Not logged on to PDM/AIWS.
Orange, flashing (1000 ms on, 1000 ms off)	1. Software download. 2. File transfer during Easy Replacement
Orange, flashing (100 ms on, 800 ms off)	"Change phone" indication during Easy Replacement.
Red, fixed	Software error. Service needed.
Red flashing	Parameter error
Red, flashing (100 ms on, 800 ms off)	Error indication during Easy Replacement. Put back old telephone in charger. Charger returns to “Not logged in to PDM/ AIWS” mode when telephone is removed.
Red, flashing (3 long flashes, 800 ms on, 100 ms off)	Parameter error in user parameters. Charger performs a factory reset and restarts.
Red, flashing (800 ms on, 100 ms off)	1. Parameter error in production parameters. Service needed for charger. 2. Error during Easy Replacement. Service needed for telephone.

LED indications are also described in troubleshooting Advanced Charger on page 505.

Troubleshooting

See Troubleshooting on page 495.

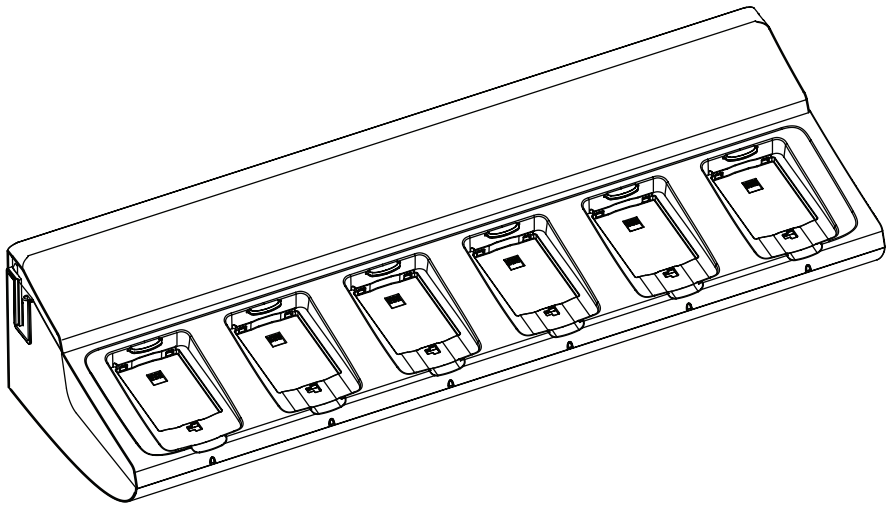
Installing Multiple Battery Charger

Introduction

This chapter describes how to install, configure and operate the Multiple Battery Charger. It charges batteries for the Avaya DECT Telephones.

Each Multiple Battery Charger charges six batteries simultaneously.

Figure 40: Multiple Battery Charger



Multiple Battery Charger can be serially connected with up to four Battery Pack Chargers connected to the same power source.

This chapter is intended as a guide for installation and troubleshooting purposes.

	Power Supply for Multiple Battery Charger
Supply voltage	100–240 VAC/0.7 A, 50/60 Hz
Building fuse for fixed installation	10 A

Installation alternatives

- The CR4 as delivered can be installed as a single unit. When installed as a single unit, the power cord with the C14 connector may be used with a suitable extension cord to be plugged into a wall outlet.

- If more than one CR4 is used in a serial configuration a fixed installation must be made. For safety reasons it is not allowed to supply more than one unit by the power cord with the C14 connector. When units are supplied in series, the installation must be made by an authorized electrician and the C14 connectors must be removed. Maximum five units may be connected in serial power supply.

In Sweden, Norway and Finland a connection to protective earth (safety grounding) must be provided.

Safety

The Battery Pack Charger CR4 shall be connected to 100-240VAC/0.7A 50/60 Hz.For safety reasons:

- the safety covers on top of the supply voltage terminal blocks must be mounted to prevent hazardous situations, like electric shock.
- when servicing the units the mains power supply cable must be disconnected.

Note the following:

for PERMANENTLY CONNECTED EQUIPMENT, a readily accessible disconnect device shall be incorporated in the building installation wiring. The disconnect device shall disconnect both poles.

for PLUGGABLE EQUIPMENT, the socket-outlet shall be installed near the equipment and shall be easily accessible.

In Sweden, Norway and Finland the unit must be connected to a wall outlet with protective earth (safety grounding). For other countries it is recommended to use a protective earth connection.

- Suomi: Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.
- Norge: Apparatet må tillkoples jordet stikkontakt.
- Sverige: Apparaten skall anslutas till jordat uttag.

Compliance

Regulatory Compliance Statements (EU/EFTA only)

Permission and Conformity

We, Avaya GmbH & Co. KG, declare that the product line Avaya Multiple Battery Charger concurs with the basic requirements and other relevant provisions of EU Directive 1999/5/EU concerning radio equipment and telecommunications terminal equipment and themutual recognition of their conformity.

Intended use

This equipment is intended for connection to radio interfaces (DECT) of Avaya PABX systems.

It is compliant with the essential requirements of the EU-Directive 1999/5/EU (Radio andTelekommunication Terminal Equipment, R&TTE).

Due to the differences of the individual public networks and network operators this compliance does not by itself give an unconditional assurance of successful operation at every network termination point. For the time being we are not aware of any network on which the equipment will not work due to its design.

In the event of problems, you should contact your equipment supplier or your Avaya service.

The conformity declaration can be accessed at the following Internet address:

www.avaya.de/gCommunication Manager/emea/de/includedcontent/conformity.htm

or search the index using the key term "Conformity".

CE.

FCC compliance statements for USA

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

IC Requirements for Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la Classe B conforme á la norme NMB-003 du Canada.

Technical Solution

The following functionality is provided by the Multiple Battery Charger:

- Charging of the Avaya DECT telephone battery.

Installation and Configuration

Multiple Battery Charger Installation

General

Important:
The unit shall be installed by authorized personnel only.

- The units shall be placed in a dry environment with a temperature range from +5° C up to + 40° C (41° F to 104° F).
- The units shall be mounted on a vertical wall.
- Avoid mounting the Multiple Battery Charger in a sunlit place. This can affect the charging capacity.
- The unit shall be mounted on concrete or plaster walls only.
- If the Multiple Battery Charger is connected to a power supply via an AC wall plug, serial power supply connection is not allowed.
- When using a fixed connection, up to five Multiple Battery Charger or Rackmount Charger can be serially connected to the same AC connection.
- If the Multiple Battery Charger is connected to a power supply via an AC wall plug, the socket-outlet shall be situated near the equipment and shall be easily accessible.
- If the Multiple Battery Charger is connected to a power supply via a fixed connection, a readily accessible disconnect device shall be incorporated in the building installation wiring.

Delivery includes:

- Battery Pack Charger
- Power supply cord including IEC C14 connector (male)
- Inlet accessory kit including cable support holders and screws

Note:
An extension cord IEC C13 AC connector (female IEC60320-C13) to wall socket has to be ordered separately. It shall be connected between the pre-installed IEC C14 AC connector (male) and the wall socket.

Required Tools etc.

- Screwdrivers
- Cutting pliers
- Multimeter
- Screws and wall plugs for wall mounting. Make sure the screws and wall plugs have the correct length for the type of wall used. See example below:

Wall material	Plug length	Screw diameter
Single plasterboard	Thorsman TP1	3.5 – 5 mm
Double plasterboard	Thorsman TP2	3.5 – 5 mm
Concrete	Thorsman TP2	3.5 – 5 mm

Examples of Ways to Mount the Battery Pack Chargers

The following picture shows different ways to mount Multiple Battery Charger. It is possible to set up different combinations of Multiple Battery Charger and Rack Chargers.

Installation steps

The installation is done in two steps:

1. Wall mounting.
2. Electrical installation.

Wall mounting

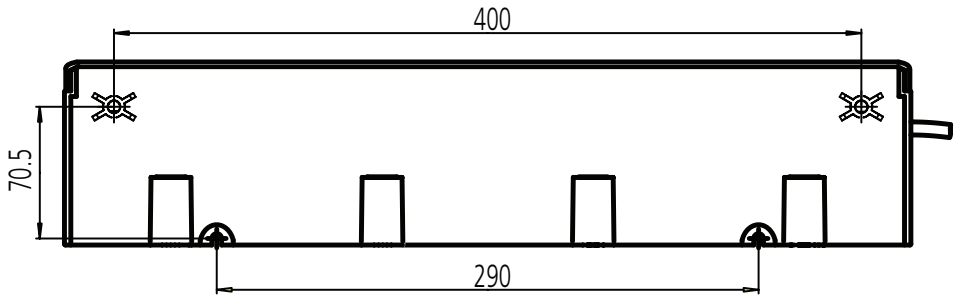
First, make an outline of how the battery pack chargers are to be placed.

Tip:
If several Multiple Battery Charger (or Rackmount Chargers) are to be mounted close to each other, mount them so that there is enough space between then to be able to disconnect the batteries or the telephones (vertical distance) and to be able to open the top cover (horizontal distance).

Tip:
When you are planning the location of the modules, start to mount them in a height that makes it easy to reach the batteries.

Measure and mark the drill holes by using the dimensions in figure 41. Drill and fasten the battery pack charger on the wall with four screws.

Figure 41: Mounting dimensions in mm

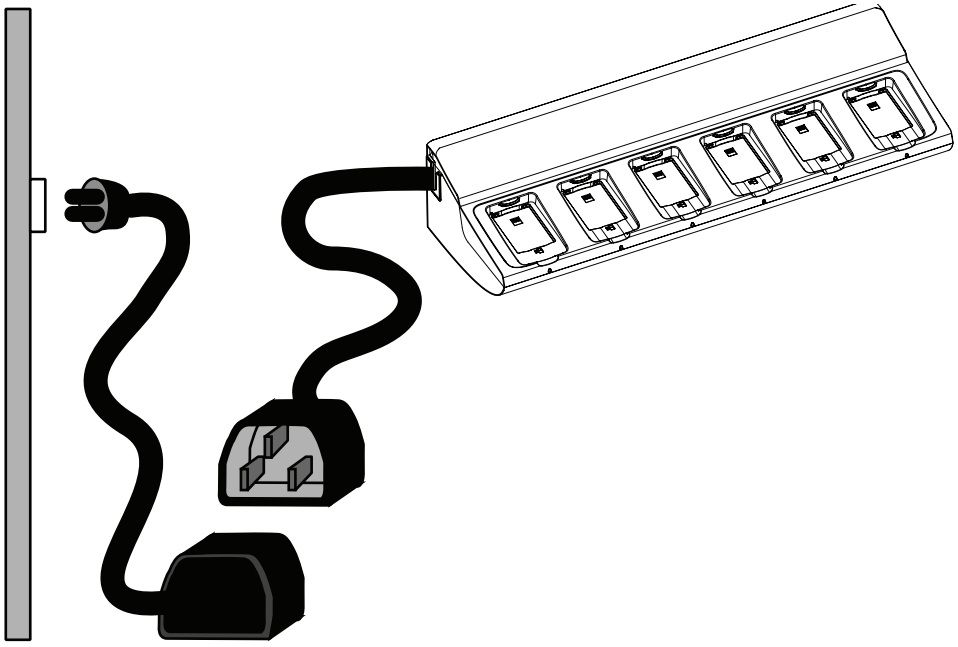


Multiple Battery Charger seen from the back

Electrical installation

The Multiple Battery Charger is delivered with a cord with a an IEC C14 connector (male). An extension cord IEC C13 AC connector (female IEC60320-C13) to wall socket has to be ordered separately. It shall be connected between the pre-installed AC connector (male) and the wall socket.

Figure 42: Multiple Battery Charger with IEC C14 connector and an extension cord with an IEC C13 connector



Installation test

1. Connect the mains power supply cord to the wall socket.

2. Place a battery in the charging slot.
3. A yellow LED indicates that charging starts while a green LED indicates a fully charged battery.

Power supply by fixed connection

Note:

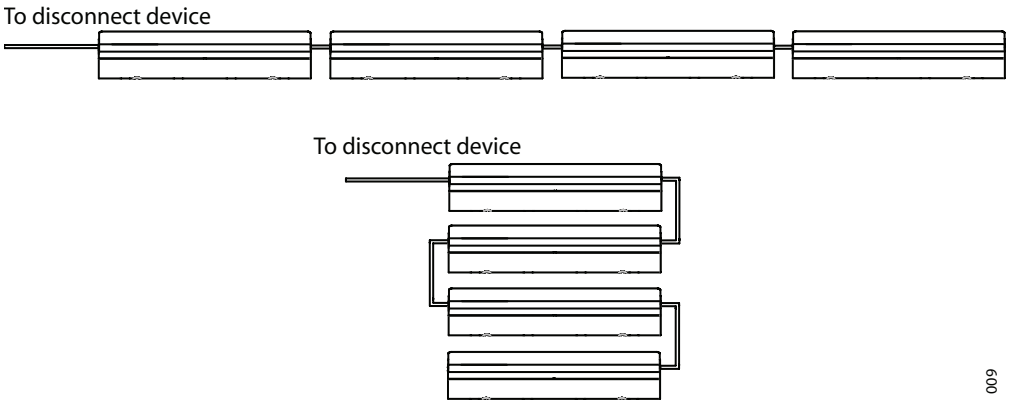
If the rack charger shall be connected with a fixed connection, the AC connection must be done by a authorized electrician.

Tip:

It is possible to use any one of the two AC terminal blocks for AC input. Consequently, the unused terminal block may be used to connect the next rack charger or battery pack charger.

The Power Supply module connects to 100-240VAC/0.7A 50/60 Hz. When working with the units the mains power supply cable bmust always be disconnected. The safety covers must be mounted on top of the power supply terminal blocks to prevent hazardous situations, like electric chock.

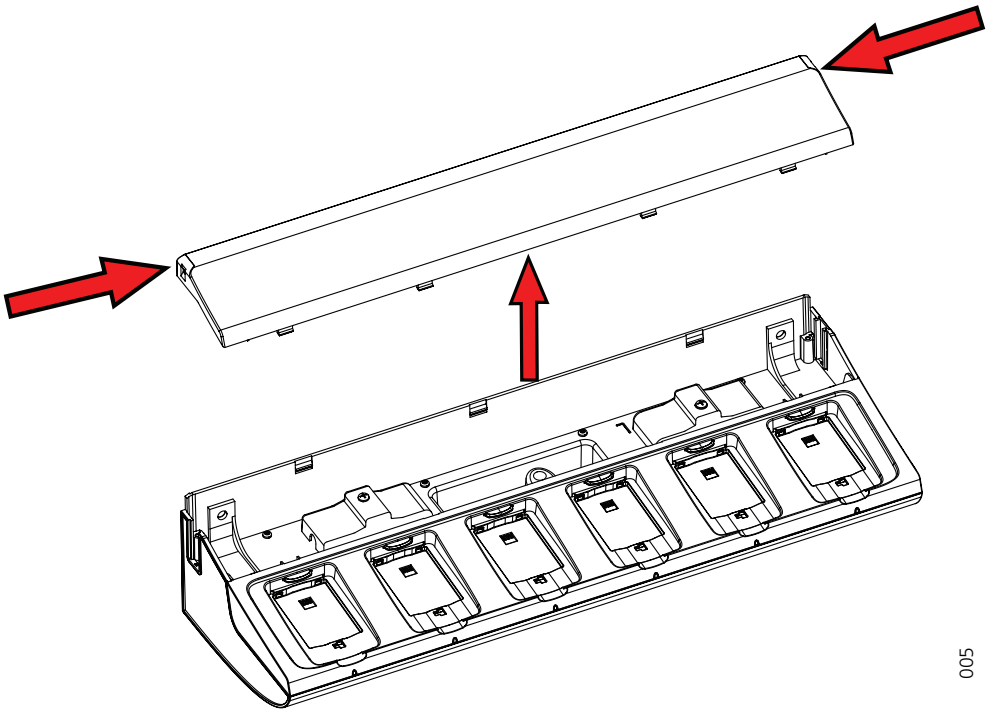
Figure 43: .Examples of how Multiple Battery Charger can be mounted and connected to a power source



Opening the top cover

Open the top cover by first pressing on the sides of the top cover, then lifting it upwards.

Figure 44: Opening the top cover of the Battery Pack Charger



Fixed installation in detail

Fixed installation of the first charger or single unit with fixed electrical installation.

1. Remove the C14 connector from the power cord. Measure cut and strip the power cord to be connected to the disconnect device.
2. Connect the mains power supply cord to the disconnect device.

The IEC colour code is used in the power cord supplied.

	Colours			
IEC	US	Old *	Load	Also called
Brown	Black	Red	Active	Line, Hot
Blue	White	Black	Neutral	Return, Cold, Grounded connector
Gr/Ye **	Green	Green	Earth	Ground, Safety Earth, Earth Ground, Grounding conductor ***

* The "Old" standard was used in various countries (including Australia), and some wiring may still use these colours.

** Gr/Ye - Green with Yellow stripe - this is the standard world wide, although it is not common in the US or Canada at present.

*** There is an important distinction between "Grounding conductor" (safety earth) and "Grounded conductor" (Neutral). These are *US* terms for the conductors and they are ***not*** interchangeable, despite the similarity of the names !

Installation of additional units in a serial power configuration

Note:

Maximum five units may be connected in power series.

Important:

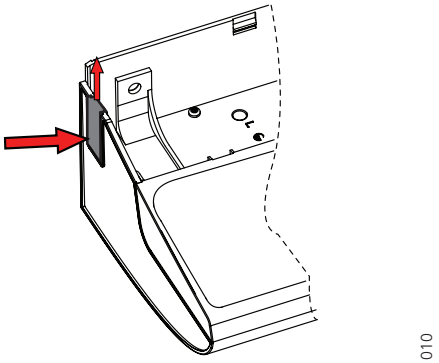
It is not allowed to connect additional Rack Chargers or Battery Pack chargers if the chargers are connected to the power supply via an AC plug.

Important:

Disconnect the power supply connection before working on the units.

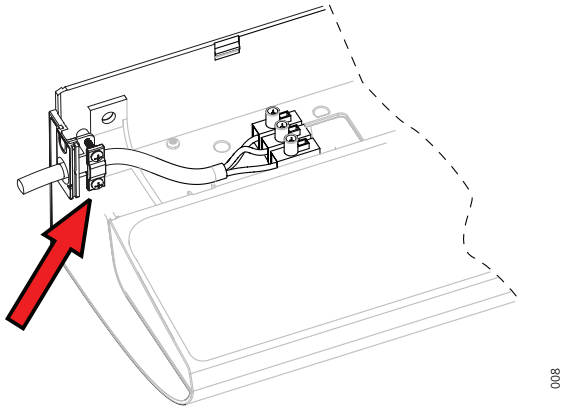
1. If the additional Rack Charger has not yet been mounted on the wall, do this according to figure 43 on page 214.
2. Open the top cover of the rack charger closer to the AC power source.
3. Remove the cover which protects the unused AC output terminal block of the charger closer to the AC power source.
4. Mount the cable support holder at the unused opening in the charger closer to the AC power source. The cable support holder is provided in the parts bag. See figure 45

Figure 45: The Rectangular Cover that shall be removed and exchanged with a Cable Support Holder with a Mains power supply cord run through it



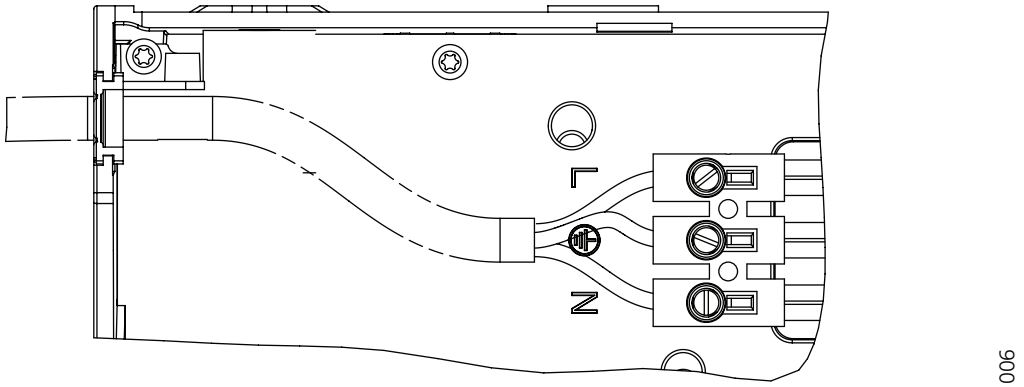
5. Remove the C14 connector from the additional charger. Cut and strip the mains power supply cord coming from the additional charger to the length required.
6. Run the power supply cord from the additional charger through the cable support holder of the previous charger, see figure 46

Figure 46: Securing the *mains power supply cable*



7. Connect the power supply cord from the additional charger to the unused terminal block in the charger closer to the AC power source. Note the embossed markings L, earth symbol and N, see figure 47.

Figure 47: The mains power supply connection



8. Mount the safety cover and fasten it with one screw.
9. Secure the mains power supply cable with two screws (2), which are provided in the parts bag, see figure 46.
10. Replace the top cover, see figure 44.
11. Fasten the power cord to the wall depending on local regulations.
12. If more rack chargers shall be connected, repeat the above steps 1-12 for the next unit.

Installation test

1. When the fixed installation is completed, apply AC power by switching on the disconnect device.
2. Place a battery in the charging slot.
3. A yellow LED indicates that charging starts while a green LED indicates a fully charged battery.

Commissioning

The commissioning includes the following:

- Installation test
- Charging

Installation test

For Installation test, see chapter Installation test on page 218 or 213.

Charging

To verify that the charging works, follow these instructions .

1. Place a battery in a charging slot.
2. A yellow LED indicates that the charging has started while a green LED indicates a fully charged battery.

Operation

When the charger is connected to external power supply, normal operation is done as follows:

charging

1. Connect the charger to the AC power supply.
2. Place a battery in the charging slot to start charging. Secure the battery by moving the lock switch.

Battery disconnection

1. Unlock the lock switch on the battery.
2. Remove the battery by lifting it.

Troubleshooting

See Troubleshooting on page 495.

Installing and operating the Rackmount Charger

Introduction

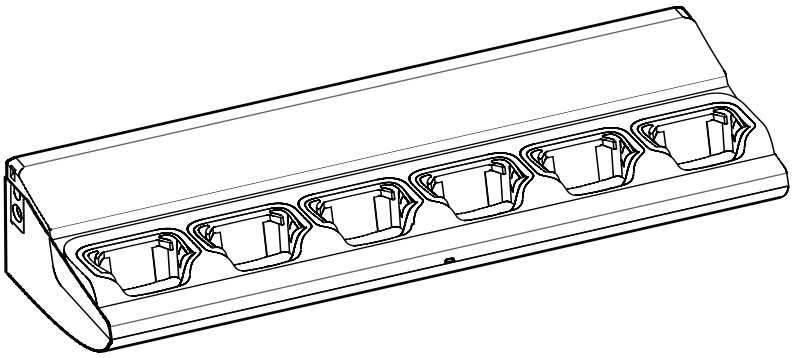
This chapter describes how to install, configure and operate the Rackmount Charger. The Rackmount Charger is a rack charger equipped with a USB port and two Ethernet ports, making it possible to connect it directly to a LAN or to a PC for the purpose of upgrading or configuring cordless telephones placed in the Rackmount Charger or the Rackmount Charger itself.

The Rackmount Charger is part of the Avaya IP-DECT systems. It charges the Avaya 3720/ 3725 DECT Telephones.

Each Rackmount Charger charges six telephones simultaneously.

The USB port is used to connect the Rackmount Charger to a PC running the Portable Device Manager (PDM) or to the Avaya In-Building Wireless Server (AIWS). This program can be used to upgrade the software and to configure parameters in cordless telephones placed in the Rackmount Charger as well as the Rackmount Charger itself. The Ethernet ports makes it possible to connect up to four Rackmount Charger to one single LAN outlet.

Figure 48: Rackmount Charger



This chapter is intended as a guide for installation, maintenance and troubleshooting purposes.

	Power Supply for Rackmount Charger
Supply voltage	100–240 VAC/0.7 A, 50/60 Hz; Building fuse for fixed installation: 10 A maximum

Installation alternatives

- The Rackmount Charger as delivered can be installed as a single unit. When installed as a single unit, the power cord with the C14 connector may be used with a suitable extension cord to be plugged into a wall outlet. Up to four single units may be connected to one single LAN outlet.
- If more than one Rackmount Charger is used in a serial configuration a fixed installation must be made. For safety reasons it is not allowed to supply more than one unit by the power cord with the C14 connector. When units are supplied in series, the installation must be made by an authorized electrician and the C14 connectors must be removed. Maximum five units may be connected in serial power supply, but LAN serial connection is limited to four units.

In Sweden, Norway and Finland a connection to protective earth (safety grounding) must be provided.

Safety

The Rackmount Charger is connected to 100-240VAC/0.7A 50/60 Hz. For safety reasons:

- the safety covers on top of the supply voltage terminal blocks must be mounted to prevent hazardous situations, like electric shock.
- when servicing the units the mains power supply cable must be disconnected.

Note the following:

for PERMANENTLY CONNECTED EQUIPMENT, a readily accessible disconnect device shall be incorporated in the building installation wiring. The disconnect device shall disconnect both poles.

for PLUGGABLE EQUIPMENT, the socket-outlet shall be installed near the equipment and shall be easily accessible.

In Sweden, Norway and Finland the unit must be connected to a wall outlet with protective earth (safety grounding). For other countries it is recommended to use a protective earth connection.

- Suomi: Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.
- Norge: Apparatet må tillkoples jordet stikkontakt.
- Sverige: Apparaten skall anslutas till jordat uttag.

Compliance

Regulatory Compliance Statements (EU/EFTA only)

Permission and Conformity

We, Avaya GmbH & Co. KG, declare that the product line Avaya Rackmount Charger concurs with the basic requirements and other relevant provisions of EU Directive 1999/5/EU concerning radio equipment and telecommunications terminal equipment and themutual recognition of their conformity.

Intended use

This equipment is intended for connection to radio interfaces (DECT) of Avaya PABX systems.

It is compliant with the essential requirements of the EU-Directive 1999/5/EU (Radio andTelekommunication Terminal Equipment, R&TTE).

Due to the differences of the individual public networks and network operators this compliance does not by itself give an unconditional assurance of successful operation at every network termination point. For the time being we are not aware of any network on which the equipment will not work due to its design.

In the event of problems, you should contact your equipment supplier or your Avaya service.

The conformity declaration can be accessed at the following Internet address:

www.avaya.de/gCommunication Manager/emea/de/includedcontent/conformity.htm

or search the index using the key term "Conformity".

CE.

FCC compliance statements for USA

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

IC Requirements for Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la Classe B conforme á la norme NMB-003 du Canada.

Technical Solution

The following functionality is provided by the Rackmount Charger:

- Provide a means for software and parameter update of telephones.
- Charging of the telephone battery.

The Rackmount Charger has one USB connection and two Ethernet connections. When using Ethernet connection it is possible to connect several Rackmount Chargers serially to the LAN.

If the Rackmount Charger is connected towards PDM via both USB and Ethernet, the USB connection has higher priority.

Note:
Each Rackmount Charger needs an IP address.

See label for MAC address.

The Rackmount Charger is equipped with a combined reset button and embedded LED on the front.

Requirements

Computer:

- Microsoft Windows XP® Professional, Service Pack 2 (SP2) or Microsoft Windows Vista® Business.
- Sun Java Runtime Environment (JRE) version 6 or higher.
- USB port. USB 1.1 required, USB 2.0 supported.
- Ethernet port 10/100 Mbit/s.

Installation and Configuration

Rackmount Charger Installation

General

Important:
The unit shall be installed by authorized personnel only.

- The units shall be placed in a dry environment with a temperature range from +5° C up to + 40° C (41° F to 104° F).
- The units shall be mounted on a vertical wall.
- Avoid mounting the Rackmount Charger in a sunlit place. This can affect the charging capacity.
- Avoid mounting the Rackmount Charger where radio/network coverage is not sufficient. This can reduce the messaging capacity.
- The unit shall be mounted on concrete or plaster walls only.
- If the Rackmount Charger is connected to a power supply via an AC wall plug, serial power supply connection is not allowed.
- If the Rackmount Charger is connected to a power supply via an AC wall plug, the socket-outlet shall be situated near the equipment and shall be easily accessible.
- If the Rackmount Charger is connected to a power supply via a fixed connection, a readily accessible disconnect device shall be incorporated in the building installation wiring.

Delivery includes:

- Rackmount Charger
- Power supply cord including IEC C14 connector (male)
- Inlet accessory kit including cable support holders and screws

Note:
An extension cord IEC C14 AC connector (female IEC60320-C13) to wall socket (IEC60320-C14) has to be ordered separately. It shall be connected between the pre-installed IEC C14 AC connector (male) and the wall socket.

Required Tools etc.

- Screwdrivers

- Cutting pliers
- Multimeter
- Screws and wall plugs for wall mounting. Make sure the screws and wall plugs have the correct length for the type of wall used. See example below:

Wall material	Plug length	Screw diameter
Single plasterboard	Thorsman TP1	3.5 – 5 mm
Double plasterboard	Thorsman TP2	3.5 – 5 mm
Concrete	Thorsman TP2	3.5 – 5 mm

Examples of Ways to Mount the Rackmount Chargers

Different ways to mount CR3 Rack Chargers is shown in figure 51 on page 228. It is possible to set up different combinations of CR3 Rack Chargers and Battery Pack Chargers. A maximum of four CR3 Rack Chargers (or Battery Pack Chargers) can be serially connected to the same LAN source.

Installation steps

The installation is done in three steps:

1. Wall mounting.
2. Electrical installation.
3. Communication cable connection.

Wall mounting

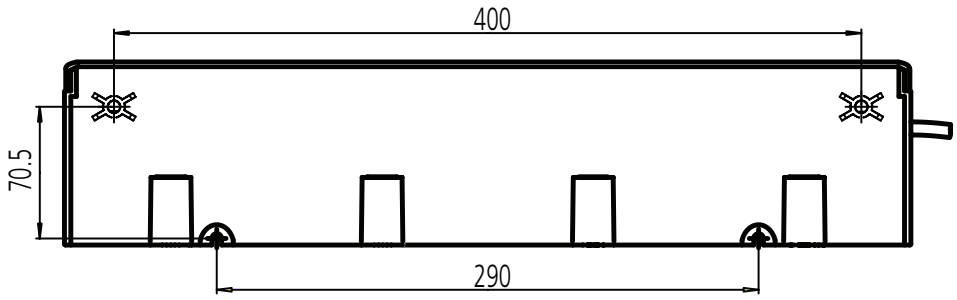
First, make an outline of how the Rackmount Chargers are to be placed.

Tip: If several Rackmount Chargers (or Multiple Battery Charger) are to be mounted close to each other, mount them so that there is enough space between them to be able to disconnect the telephones (vertical distance) and to be able to open the top cover (horizontal distance).

Tip: When you are planning the location of the modules, start to mount them in a height that makes it easy to reach the cordless telephones and to read the cordless telephones' display.

Measure and mark the drill holes by using the dimensions in figure 49. Drill and fasten the Rackmount Charger on the wall with four screws.

Figure 49: Mounting dimensions in mm



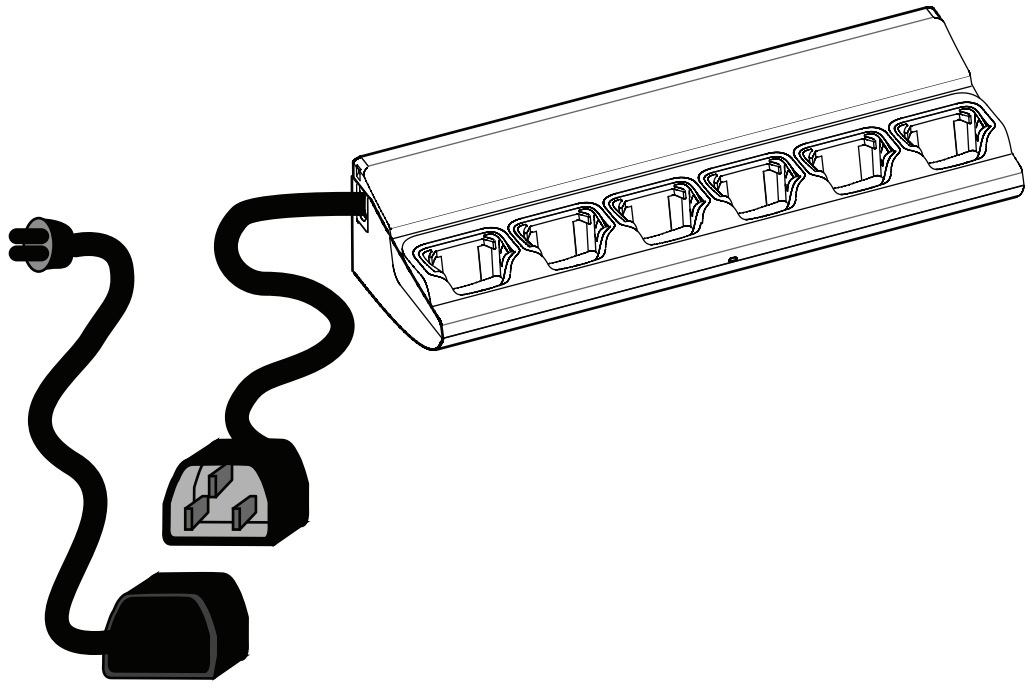
Rackmount Charger seen from the back

Electrical installation

Power supply by Power cord to wall outlet

The Rackmount Charger is delivered with a cord with an IEC C14 connector (male). An extension cord IEC C13 AC connector (female, IEC60320-C13) to wall socket has to be ordered separately. It shall be connected between the pre-installed AC connector (male) and the wall socket.

Figure 50: Multiple Battery Charger with pigtail connector



Proceed with the Communication cable connection when required.

Installation test

1. Connect the mains power supply cord to the wall socket.
2. The LED on the front of the charger shall now light up.

Power supply by fixed connection

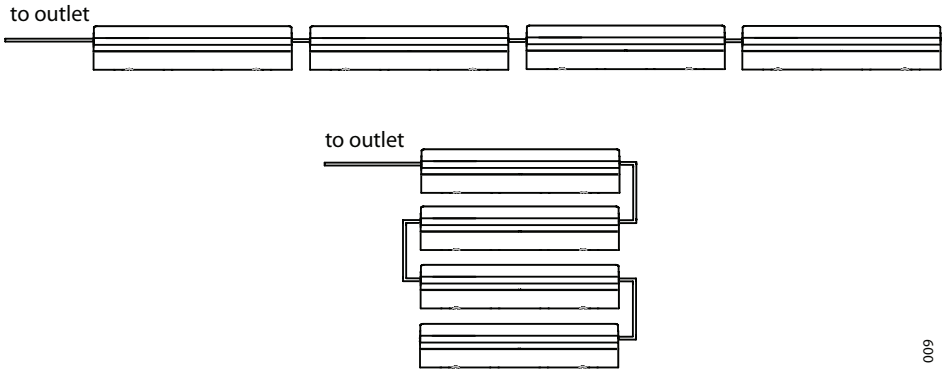
Note:

If the rack charger shall be connected with a fixed connection, the AC connection must be done by a authorized electrician.

Tip: It is possible to use any one of the two AC terminal blocks for AC input. Consequently, the unused terminal block may be used to connect the next rack charger or battery pack charger.

The Power Supply module connects to 100-240VAC/0.7A 50/60 Hz. When working with the units the mains power supply cable must always be disconnected. The safety covers must be mounted on top of the power supply terminal blocks to prevent hazardous situations, like electric chock.

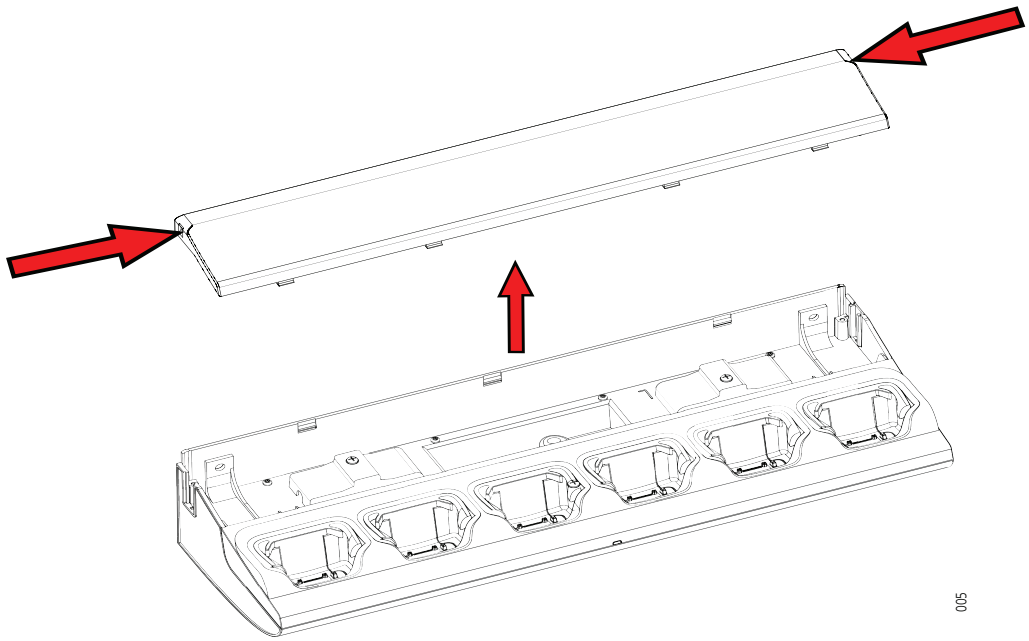
Figure 51: Examples of how Rackmount Chargers can be mounted and connected to a power source



Opening the top cover

1. Open the top cover by first pressing on the sides of the top cover, then lifting it upwards.

Figure 52: Opening the top cover of the Rackmount Charger



Fixed installation in detail

Fixed installation of the first charger or single unit with fixed electrical installation.

1. Remove the C14 connector from the power cord. Measure cut and strip the power cord to be connected to the disconnect device.
2. Connect the mains power supply cord to the disconnect device.

The IEC colour code is used in the power cord supplied.

	Colours			
IEC	US	Old *	Load	Also called
Brown	Black	Red	Active	Line, Hot
Blue	White	Black	Neutral	Return, Cold, Grounded connector
Gr/Ye **	Green	Green	Earth	Ground, Safety Earth, Earth Ground, Grounding conductor ***

* The "Old" standard was used in various countries (including Australia), and some wiring may still use these colours.

** Gr/Ye - Green with Yellow stripe - this is the standard world wide, although it is not common in the US or Canada at present.

*** There is an important distinction between "Grounding conductor" (safety earth) and "Grounded conductor" (Neutral). These are *US* terms for the conductors and they are ***not*** interchangeable, despite the similarity of the names !

Installation of additional units in a serial power configuration

Note:
Maximum five units may be connected in power series.

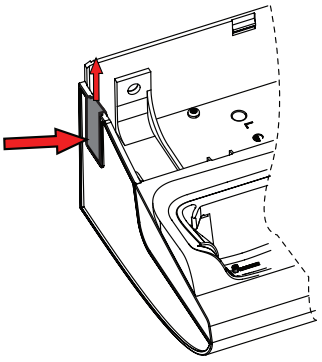
Note:
Maximum four units may be connected in LAN series to one single LAN outlet.

Important:
It is not allowed to connect additional Rack Chargers or Battery Pack chargers if the chargers are connected to the power supply via an AC plug.

Important:
Disconnect the power supply connection before working on the units.

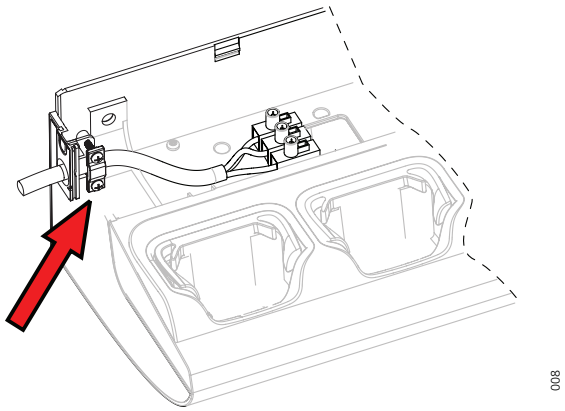
1. If the additional Rack Charger has not yet been mounted on the wall, do this according to figure 51 on page 228.
2. Open the top cover of the rack charger closer to the AC power source.
3. Remove the cover which protects the unused AC output terminal block of the charger closer to the AC power source.
4. Mount the cable support holder at the unused opening in the charger closer to the AC power source. The cable support holder is provided in the parts bag. See figure 53.

Figure 53: The Rectangular Cover that shall be removed and exchanged with a Cable Support Holder with a Mains power supply cord run through it



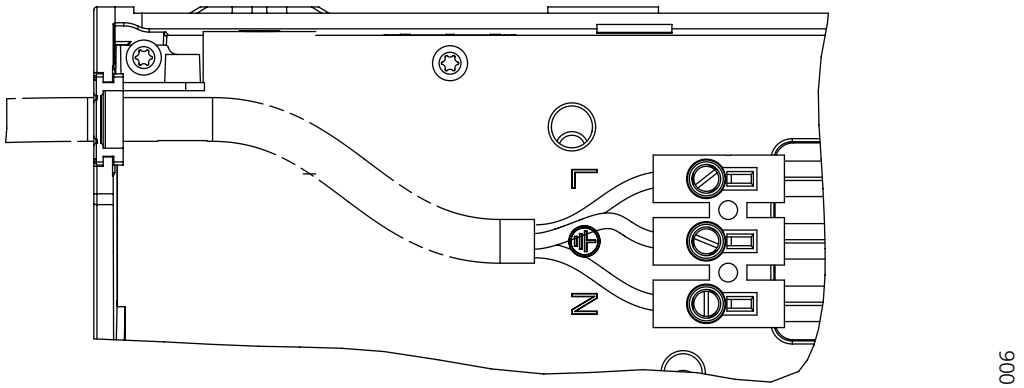
5. Remove the C14 connector from the additional charger. Cut and strip the mains power supply cord coming from the additional charger to the length required.
6. Run the power supply cord from the additional charger through the cable support holder of the previous charger, see figure 54

Figure 54: Securing the mains power supply cable



7. Connect the power supply cord from the additional charger to the unused terminal block in the charger closer to the AC power source. Note the embossed markings L, earth symbol and N, see figure 55.

Figure 55: The mains power supply connection



8. Mount the safety cover and fasten it with one screw.
9. Secure the mains power supply cable with two screws (2), which are provided in the parts bag, see figure 54.
10. Replace the top cover, see figure 52.
11. Fasten the power cord to the wall depending on local regulations.
12. If more rack chargers shall be connected, repeat the above steps 1-12 for the next unit.

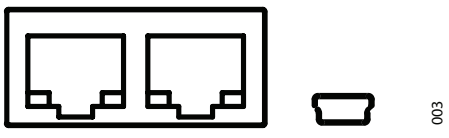
Installation test

1. When the fixed installation is completed, apply AC power by switching on the disconnect device.
2. The LED on the front of each charger shall now light up.

Communication cable connection

The communication cable connections are situated under the top cover of the Rackmount Charger.

Figure 56: Communication connections inside the Rackmount Charger



Ethernet connections USB connection

When connecting several Rackmount Chargers over Ethernet, it is possible to connect them in series using the two Ethernet connections. Power over Ethernet is not supported.

1. Open the top cover, see figure 52 on page 229.

2. Connect the communication cable(s) to the connections shown in figure 56.
3. Let the communication cables run on top of the cable support holders, see figure 54 on page 231.
4. Close the top cover.

The USB Interface supports USB 2.0 Full speed. One Mini-B Receptacle USB connector is used. The USB connection is used for communication with a PC. Power over USB is not supported.

The USB connection is used for connecting the Rackmount Charger directly to a PC or to a LAN for the purpose of upgrading or configuring the Rackmount Charger itself or telephones placed in the charger.

Software installation

The charger software is pre-installed. Updates can be performed by using PDM or AIWS. For PDM details see Installing and operating the Portable Device Manager (PDM) on page 239, or for AIWS details see Upgrade a Device with new Software on page 349.

Rackmount Charger Configuration

Each Rackmount Charger need access to DHCP to receive an IP address automatically. If no DHCP is accessible it is possible to configure with PDM/AIWS.

If the Rackmount Charger is configured to run DHCP, connect the network cable and the charger will automatically receive an IP address. If the charger is not configured to run DHCP the charger will use the setup IP addresses.

The following parameters exist for Rackmount Charger and can be changed via AIWS or PDM:

Parameter	Description
Ethernet Bit rate[1]	auto (default)
Ethernet connector[1]	auto (default)
Ethernet duplex[1]	auto (default)
DHCP Enabled	Yes (default), No
Charger IP address	192.168.0.101 (default)
Subnet mask	255.255.255.0 (default)
Default gateway IP address	192.168.0.1 (default)
DNS IP address	192.168.0.2 (default)
Charger IP port	12346 (default)

Service Discovery Enabled	Yes (default), No
Service Discovery Domain	Name of domain
DH IP address (one DH only)	192.168.0.3 (default)
DH IP port	10147 (default)

1. Currently only “auto” setting is available

Follow this instruction to set Rackmount Charger parameters:

1. Check that the Rackmount Charger is connected to PDM/AIWS.
2. In PDM or the Device Manager in AIWS, click on the **Numbers** tab.
3. Select the Rackmount Charger device that you want to change parameters for.
4. In the **Number** menu, click **Edit...**. The **Edit parameters** window opens.
5. Edit the parameters you want to edit.
6. Click **OK**.

Rackmount Charger does not appear in AIWS

If the Rackmount Charger does not appear in the AIWS Device Manager, the Service Discovery might not be working in the customers network setup.

In this case connect the Rackmount Charger to PDM and edit the following parameters:

- *Service Discovery Enabled:* No
- *DH IP address (one DH only)*: Enter AIWS IP-Address

Note:

Service Discovery might not work if the Rackmount Charger is not in the same subnet as the AIWS.

Commissioning

The commissioning includes the following:

- Installation test
- Charging
- Communication with Avaya In-Building Wireless Server (AIWS) or Portable Device Manager (PDM)

Installation test

For Installation test, see chapter Installation test on page 228 or 235.

Charging

To verify that the charging works, follow these instructions:

1. Check that the LED on the front of the charger(s) is lit.
2. Place a telephone in a charging slot. Start of charging may be indicated differently depending on telephone model.

Communication with AIWS or PDM

See figure 56 on page 232 to see the communication connections to the charger.

Follow these instructions to start PDM or AIWS:

If you are using AIWS:

1. Check that the Rackmount Charger is connected.
2. Start AIWS.
3. Go to the **Devices** tab and verify that the Rackmount Charger is online (it may take up to 15 sec).

If you are using PDM:

1. Check that the Rackmount Charger is connected to your PC.
2. Start PDM.
3. Go to the **Devices** tab and verify that the Rackmount Charger is online.

For instructions on how to verify that the charger parameter setting works, and for further instructions, please see Installing and operating the Portable Device Manager (PDM) on page 239, or Devices on page 338.

Operation

Charger Operation

When the charger is connected to external power supply, normal operation is done as follows:

Telephone charging

1. Connect the charger to the AC power supply.
2. Place a telephone in the charging slot to start charging.

Telephone disconnection

1. First, tilt the telephone forwards.
2. Then, lift the telephone upwards.

Note:
Do not try to lift the telephone upwards before tilting it forwards.

If the charger is connected to PDM/AIWS, the following operations can be done:

- Software upgrade of devices
- Parameter settings for devices

See Installing and operating the Portable Device Manager (PDM) on page 239, or Devices on page 338, for details.

- Easy Replacement

  The Rackmount Charger supports the Easy Replacement feature. See Configuring Avaya 3725/3720 telephones on page 145 for details.

Regarding updates of telephones, please see respective User Manual.

LED indications

The charger is equipped with a status LED. The following indications are used:

LED indication	Description
Green, fixed	Logged on to PDM.
Orange, fixed	Not logged on to PDM.
Orange, flashing (slow: 0.5 Hz)	1. Software download. 2. File transfer during Easy Replacement
Orange, flashing (short flash 1.1 Hz)	"Change phone" indication during Easy Replacement.
Red, fixed	Software error. Service needed.
Red, flashing (100 ms on, 800 ms off)	Error indication during Easy Replacement. Put back old portable in charger. Charger returns to “Not logged in to PDM/ WSM” mode when portable is removed.
Red, flashing (3 long flashes, 800 ms on, 100 ms off)	Parameter error in user parameters. Charger performs a factory reset and restarts.
Red, flashing (800 ms on, 100 ms off)	1) Parameter error in production parameters. Service needed for charger. 2) Error during Easy Replacement. Service needed for both portables.

LED indications are also described in troubleshooting Rackmount Charger on page 507.

The reset button is used to reset the Rackmount Charger.

Maintenance

Software Upgrade

The charger software is pre-installed. Updates can be performed by using PDM or AIWS. For PDM details see Installing and operating the Portable Device Manager (PDM) on page 239, or for AIWS details see Upgrade a Device with new Software on page 349.

Administration

Data backup

N/A

Troubleshooting

See Troubleshooting on page 495.

Installing and operating the Portable Device Manager (PDM)

Introduction

The Portable Device Manager (PDM) provides a generic application for managing Cordless Telephones, Advanced Chargers and Rackmount Chargers on one or more sites.

The PDM makes it possible to edit parameters, update software in the devices and upload files. It can save parameters and software for individual sites in a database.

This chapter is intended as a guide for installation, maintenance and troubleshooting purposes and is relevant for:

- Installation and parameter setup.
- Device administration and PDM daily use.
  Handles devices on own site only.

How to Use this Chapter

For a basic description on how to work with PDM, see PDM description on page 242.

Installation and Configuration

These tasks are intended for installation and configuration.

In order to simplify, for example an installation on a site, use the following steps.

1. Install the PDM on your computer, see Software Installation on page 244.
2. Open and configure the PDM, see Software Configuration on page 244.
3. Create a template with settings common for all devices of a certain device type at the site, see Create a Parameter Template on page 280.

During system setup it is likely that the personnel doing the installation and configuration continues with the Administration tasks below to make the system fully functioning.

Administration

These tasks are intended for administration. This is the recommended order.

1. Create new Numbers, see Create New Numbers on page 258, and run the template on the Number(s), see Run a Template to Set Parameter Values on page 261.
2. Make individual settings for each Number. See Edit Parameters *on page 259*.
3. If applicable, switch on the devices.
4. Connect the devices, one after the other, and associate them with the Numbers. Different devices have different ways of connecting. See Associate a Number with a Device on page 262.

Note:

The very first time a device is connected to the USB port, the **Found New Hardware** wizard displays (not for all computers). Do the following: Select **No, not this time** and click **Next** (twice).

More tasks are described in this document, such as how to import different types of files.

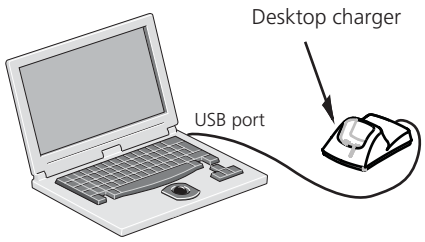
Technical Solution

The PDM software is installed on a PC running Windows XP® Professional or Windows Vista® Business. The charger is then connected to the PC running the PDM software via the USB port. The COM port is also supported by PDM but currently no Avaya device.

Note:

Only one charger at a time can be connected to PDM. A Rackmount Charger can hold one or more cordless telephones though.

Figure 57: Charger connection to the PDM



Parameters can be edited for a single device and then sent to the device, but if many devices are to be updated with new parameter settings it is also possible to create a parameter template and run the template on each Number.

Parameters can be uploaded from a connected device, edited and sent to the device again. If the PDM shall store parameter settings in the site database or not, is selectable.

When editing parameters there are help texts to assist in writing the correct parameter format.

Devices can be upgraded with new software. A text and a status bar indicates that the connected device is being updated with the new software.

Requirements

See Technical Data Portable Device Manager (PDM) on page 482.

PDM description

PDM terminology

This section gives a brief description of the basic terminology in PDM.

- Device; can be a charger or a portable device that can be connected to PDM.
- Number; the complete settings for a single device. Also chargers have a Number.
- Template; general settings for a specific device type. A template can be applied to several Numbers of the same device type.
- Tabs; in the PDM there are three different views, or tabs. In these tabs, the information for devices, Numbers and templates are shown. Some information is shown in two tabs.
- Parameter definition file; a file including all possible settings for a certain device type. Templates are created from parameter definition files.
- Software; is the software used in devices. The device software can be updated to a new version via PDM.
- Version; parameter definition files and device software are indicated by versions.
- Package file; a file that can contain other files, such as parameter definition files, software files and template files.
- Importing; diffent types of files can be imported. Note that if a software file should be imported, it may have been delivered in a package file.
- Associate; before being able to synchronize parameters between PDM and devices, it is necessary to associate a Number with the device. Association includes all parameters. If it exists on that device type, it also includes Contacts.
- Assign; it is possible to assign a Number to a device that has not yet been assigned a Number in the Device Manager. Assign includes only the parameters defining the Number.

PDM usage

This section gives a short description to give a basic understanding on how to use the PDM with devices. This description is intended to be used to get a basic understanding of the work flow and is not intended to be followed in work.

- Import a parameter definition file of the corresponding device type to PDM.
- Create a template from the parameter definition file.
- Add a device to PDM.

- Create a new Number for the corresponding device type.
- Associate the Number with the device.

Refer to the following chapters, mainly chapters Operation on page 248 and Administration on page 279, for a detailed description.

Installation and Configuration

Software Installation

This section describes the installation procedure when installing from a CD.

Note:
Do not connect the hardware to the computer before installation.

1. Close all running programs.
2. Insert the PDM installation CD.
3. Follow the instructions given by the setup program.

If the setup program does not start automatically, it is possible to do one of the following:

- Right-click on the CD-drive in a file browser and select **Install**.
- Double-click on the **SETUP.EXE** file on the CD in a file browser.

Software Configuration

This chapter includes settings for:

- Initial startup
- Optional COM port settings
- Site setup
- Definition files
- Language

Initial startup

In the **Start** menu, select **All Programs > Avaya WinPDM > Avaya WinPDM**.

Note:
Windows Firewall may alert you of **MwpCSI**, **PMServer**, **UspCSI, CuspSerialCSI** and **CuspCSI**. You can ignore these security alerts since they will not affect the PDM, but then the alerts will appear every time the PDM is started. A better way to prevent the messages from showing up is to select **Continue blocking** or **Unblock**.

The first time PDM is started, the **Create site** dialogue opens. See Create a New Site on page 256.

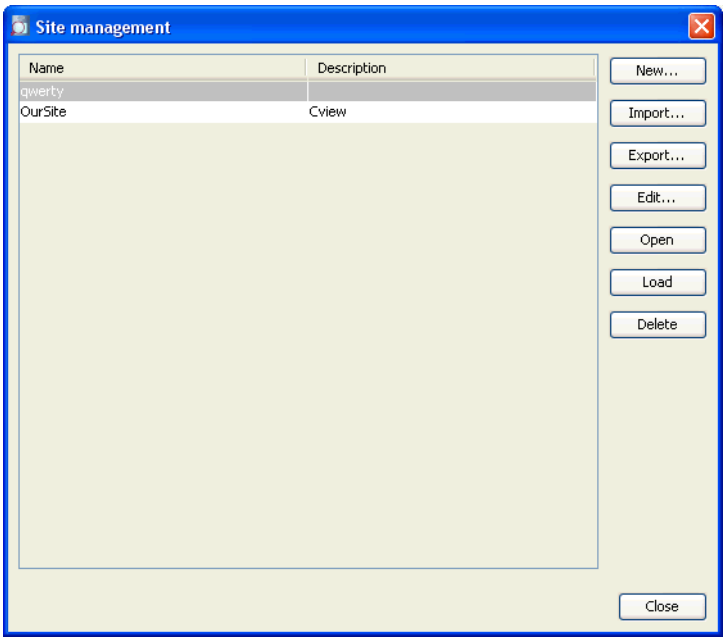
Optional COM port settings

If only the USB connection will be used, the settings in this section are not needed. No device using the COM port is supported currently by Avaya.

Site setup

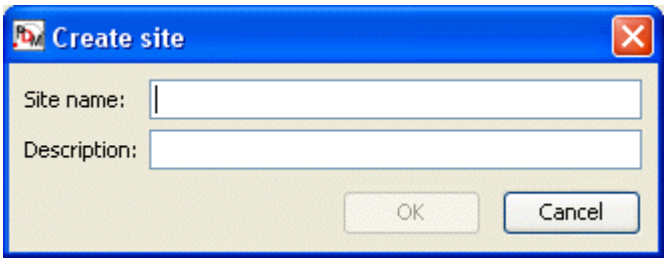
1. In the **File** menu, select **Site management**. The **Site management** dialogue opens.

Figure 58: Site Management dialogue.



2. Click **New**. The **Create site** dialogue opens.
3. In the **Create site** dialogue, enter a site name and a site description (optional) in their respective fields.

Figure 59: Create Site dialogue.



Note:
One site needs to be present for the PDM to be able to run.

4. Click **OK**.
5. Click **Close**.

Definition files

This chapter describes how to import definition files for first use. See also File management on page 268.

1. In the **File** menu, select **File management**. The **File management** window opens.
2. In the **File management** window, click on the **Parameter definition** tab.
3. Click **Add**. The **Import files** window opens.
   You may have to contact your supplier for the latest updates.

   Note:
   Definition files can also be distributed as package files including different types of files. See chapter Import package files on page 269.
4. In the **Import files** window, select the files to be imported and click **Open**. The files are imported to PDM.
5. Click **Close**.

How to import **`parameter definition files`** is described in Import Parameter Definition files on page 269.

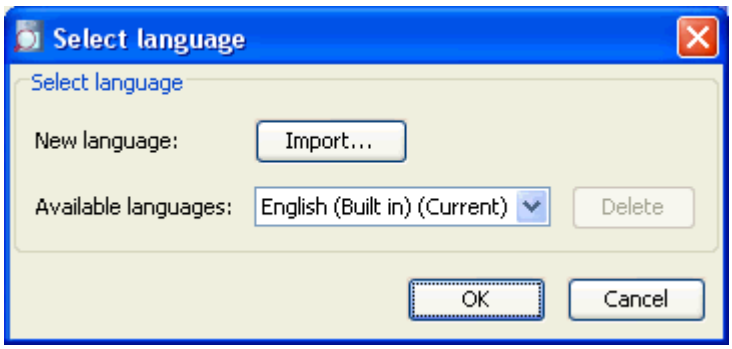
Language settings

Note:
There is a difference between **`Translation files`** (.xml) described in this section and **`Language files`** (.lng) that are described in Import Language files on page 271. Import of language files are done via the **File** menu.

If you want to change the language to be used in PDM and there are Translation files available, it is possible to change the language used in PDM to another language.

1. In the **Options** menu, select **Preferences** > **Select language**. The **Select language** dialogue opens.

Figure 60: The Select language dialogue



2. In the **Available languages** field, check if the preferred language is available via PDM.
3. If the preferred translation file needs to be imported, do so by clicking the **Import...** button. In the **Import files** window, find and select the translation file to imported and click **Open**.
4. In the **Available languages:** field, select which language to use. English is default.
5. Click **OK**. The dialogue closes.

Operation

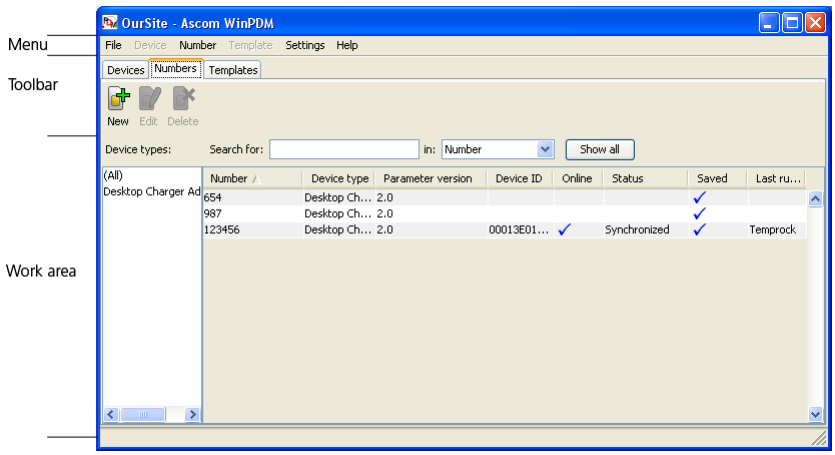
The PDM GUI

PDM Window

The PDM window consists of three areas: **Menu**, **Toolbar** and **Work Area**. The Toolbar has three tabs: **Devices**, **Numbers** and **Templates**. When one of these tabs is selected the available devices, numbers or templates will be shown in the left hand pane of the work area. The right hand pane shows the devices, numbers or templates which have already been configured.

In the upper part of the Work area there are search fields where different search criteria can be selected depending on which tab that is displayed.

Figure 61: PDM window areas



Sort the List

By default the lists in **Devices**, **Numbers**, and **Templates** are sorted by **Device ID**, **Number**, and **Name** respectively. To sort the list by any other column, click on the appropriate column heading. To reverse the sort order, click on the column heading again. The sort order is indicated by an up or down arrow in the column heading. Secondary sorting order can be done by pressing **Ctrl** and clicking on the column heading.

Filter the List

By default the list in each tab shows all available Devices, Numbers, or Templates. It is possible to filter the list by selecting the desired device type in the **Device types:** column in the left pane.

Colour coding

General colour coding

This colour coding is valid for the lists under the tabs:

- If the version number is shown in red, PDM has found no parameter definition files supporting that device type.
- If the version number is shown in dark red, the parameter definition file is compatible, but does not have exactly the same version as the device.

Colour coding for parameter and template editing

In the parameter and template editing windows, the following colour coding is used:

Colour	Context	Description
Black	General	Normal
Dark blue	For templates and parameter editing	Parameter has been edited during the current session
Purple	For templates	The parameter is included in the template (checked)
Red	For templates and parameter editing	Value not valid
Turqoise	For templates and parameter editing	The value differs from the default value

Navigation

For keyboard shortcuts, see PDM Keyboard shortcuts on page 286.

Tabs

The information in PDM is shown in different views, or tabs:

- Devices tab
- Numbers tab
- Templates tab

In each of these tabs, specific information is shown in lists about devices, Numbers, or templates. Some of the information overlaps, for example Device ID, which is tied to both a specific device and to a specific Number.

The operations that can be done in the Device Manager are done from these tabs and from the menu. Different menues are accessible in the diffferent tabs.

Devices Tab

Select the **Devices** tab. The view shows all devices configured at the site in a detailed list. The following information can be displayed:

- **Device ID** – the unique identifier of the device.
- **Device type** – the device model.
- **Software version** – the version of the software in the device.
- **Parameter version** – the version of the parameters in the Number
- **Upgrade status** – might show the following icons:

  – new software upgrade is in progress.
  It is also possible to see a progress bar when the device is being upgraded.

  – software upgrade Pending, Request sent, or Accepted (a green arrow).

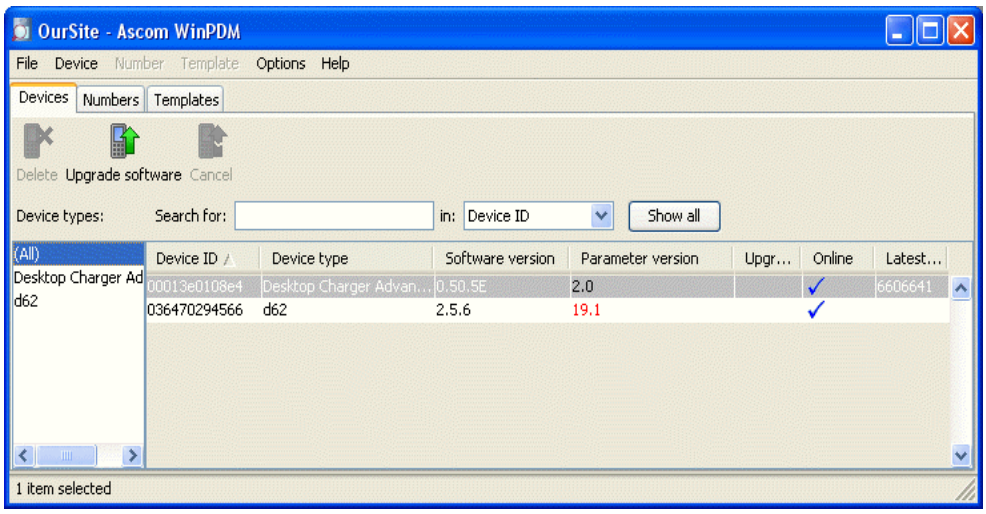
  – software upgrade is Scheduled or Retrying.

  – the last software upgrade Failed or Aborted (a red broken arrow).

  – device busy, operation cannot be executed because handset is not in idle state. Please bring handset back to idle state to start the operation. Sometimes a restart of the PDM application is needed to get the proper status update for this handset.

- **Online** – shows if the device is connected to the PC running PDM. The ✓ icon indicates a connected device.
- **Latest number** - shows the Number ID that the device had during its last login.

Figure 62: The Devices tab showing a list of devices in a system

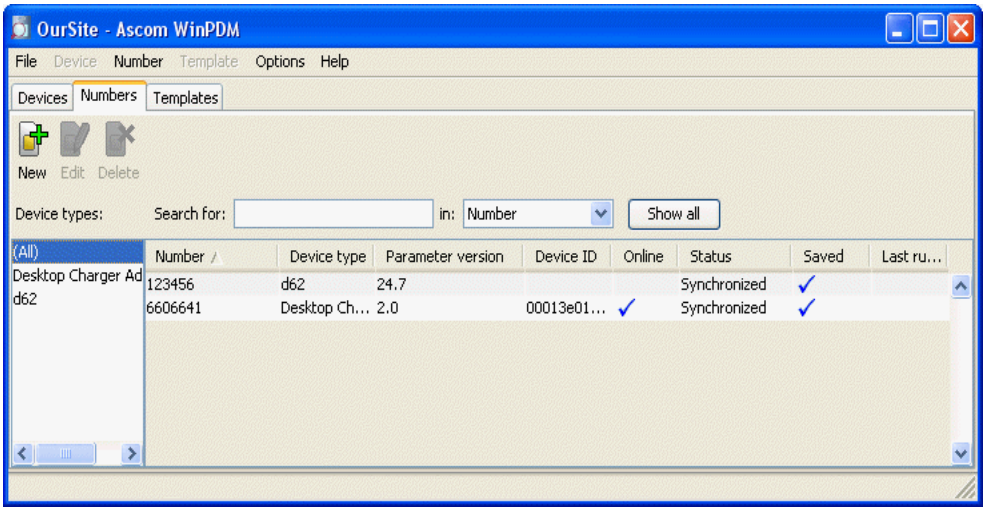


Numbers Tab

Select the **Numbers** tab. The view shows all Numbers configured at the site in a detailed list. The following information can be displayed:

- **Number** – the unique identifier of the Number. The identifier is unique for that device type.
- **Device type** – the device model the Number is intended for.
- **Parameter version** – shows the version of the parameters in the Number.
- **Device ID** – the unique identifier of the device that the Number is associated to.
- **Online** – shows if the device the Number is uploaded to is connected to the PC running PDM. The ✓ icon indicates a connected device.
- **Status** – shows the parameter synchronization status. A Number can also be queued for synchronization. Several different indications are used, for example Synchronizing, Sync queued, Save queued, Synchronized, etc.
  When the Number is offline, the database status is shown; Synchronized or Not synched.
- **Saved** – shows if the Number's parameters have been stored in the database. The ✓ icon indicates that the parameters have been stored.
- **Last run template** - indicates which template that was last run for that Number.

Figure 63: The Numbers tab showing a list of Numbers in a system



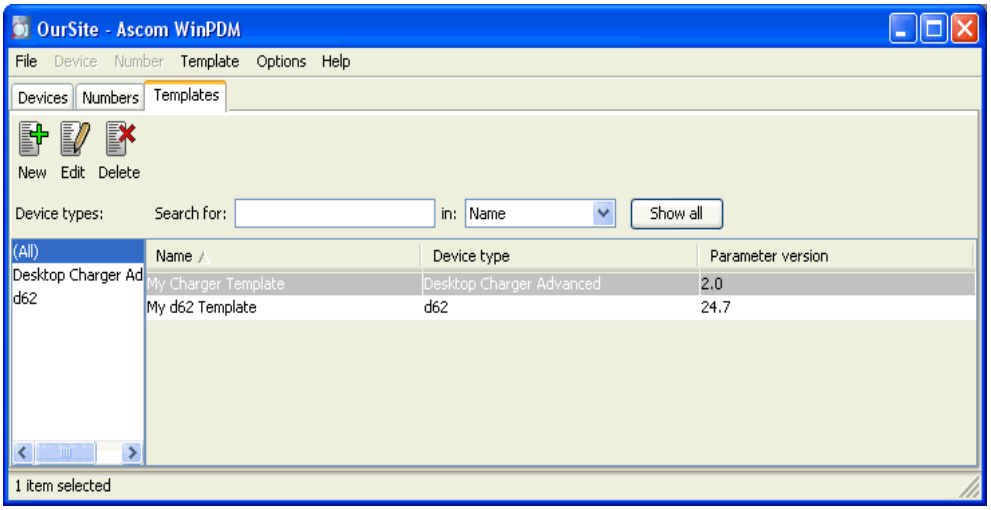
Templates Tab

Select the **Templates** tab. The view shows all templates configured at the site in a detailed list. The following information can be displayed:

- **Name** – the name of the template.

- **Device type** – the device model.
- **Parameter Version** – shows the parameter version.

Figure 64: The Templates tab showing a list of templates in a system



The New Device Wizard

When a new device is received from your supplier and it is placed in the charger, the **New Device Wizard** window opens.

Figure 65: New Device Wizard

New Device Wizard
Welcome to the Found New Device Wizard
Ascom WinPDM has detected a new d62 device with parameter version 19.1
What do you wish to do with this device?
Associate with number
There are no compatible numbers for this device.
Run template
There are no compatible templates for this device.
Do nothing
Close this dialog without any further actions.
Click OK to continue
OK
Cancel

In the **New Device Wizard** there are three choices:

- **Associate with Number**

  The associate with device dialogue opens. Association means that all parameters are transferred to the device. If the information **There are no compatible numbers for this device** is shown, it means that no Numbers for that device type have been created in PDM.

- **Run template**

  The Run template dialogue opens. The parameter values included in the template are transferred to the device. If the information **There are no compatible templates for this device** is shown, it means that no templates for that device type have been created in PDM.

- **Do nothing**

  The wizard closes without any action.

Associate with Number

1. Select **Associate with number**.
2. Click **Next**.
3. The **Associate device** dialogue opens with a list of numbers from the database.
4. Select a number and click **OK**.

5. The parameters in the database are synchronized to the device.

Run template

1. In the **New Device Wizard** window, select **Run template**.
2. Click **Next**.
3. The **Run template** dialogue opens with a list of templates.
4. Select a template and click **Next**.
5. The template is now applied to the device.

Do nothing

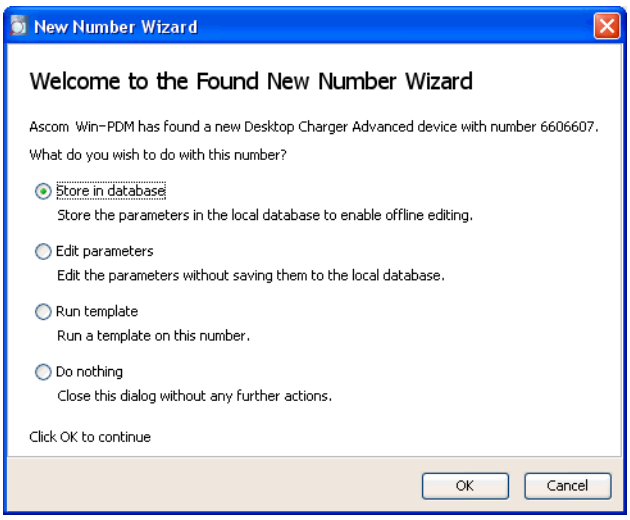
1. In the **New Device Wizard** window, select **Do nothing**.
2. Click **OK**.
3. The **New Device Wizard** window closes.

The **New Device Wizard** window also closes if **Cancel** is clicked.

The New Number Wizard

When a new device that has a new Number is received, the **New Number Wizard** window opens.

Figure 66: The New Number Wizard


New Number Wizard
Welcome to the Found New Number Wizard
Ascom Win-PDM has found a new Desktop Charger Advanced device with number 6606607.
What do you wish to do with this number?
Store in database
Store the parameters in the local database to enable offline editing.
Edit parameters
Edit the parameters without saving them to the local database.
Run template
Run a template on this number.
Do nothing
Close this dialog without any further actions.
Click OK to continue
OK
Cancel

In the New Number Wizard there are four choices:

- **Store in database**

  The Number with its parameters is stored in the database.

- **Edit parameters**

  A window opens where it is possible to edit parameters for the new Number.

- **Run template**

  The Run template dialogue opens. The parameter values included in the template are transferred to the device.

- **Do nothing**

  The wizard closes without any action.

Store in database

1. Select **Store in database**.
2. Click **OK**.
3. The Number (all parameters) is stored in the database.

Edit parameters

1. Select **Edit parameters**
2. Click **Next**
3. The **Edit parameters** window opens.

   See Edit Parameters *on page 259*.

Run template

1. In the **New Device Wizard** window, select **Run template**.
2. Click **Next**.
3. The Run template dialogue opens with a list of templates.
4. Select a template and click **Next**.
5. The template is now applied to the device.

Do nothing

1. In the **New Device Wizard** window, select **Do nothing**.
2. Click **OK**.
3. The **New Number Wizard** window closes.

The **New Number Wizard** window also closes if **Cancel** is clicked.

Open the PDM

1. In the **Start** menu, select **All Programs > Avaya WinPDM > Avaya WinPDM**.
2. The view of the last used **Site** opens. To open another site, see Open a Site on page 257.

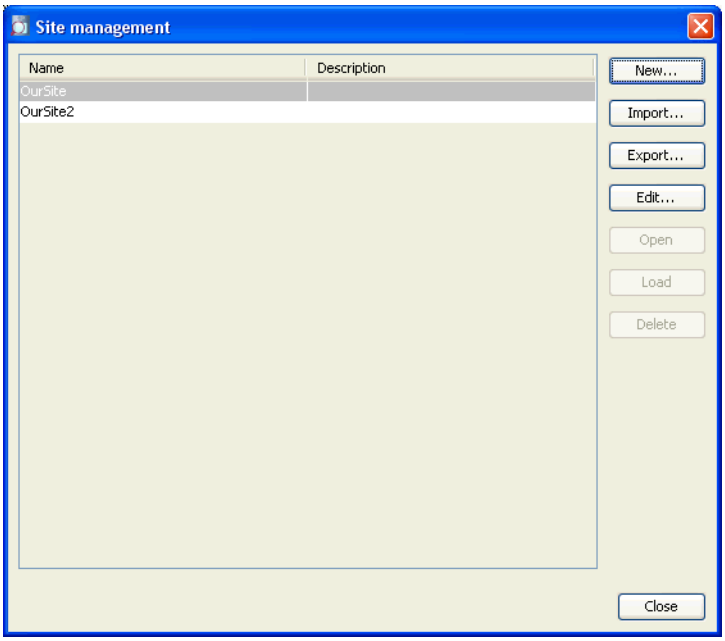
Site Management

By creating a Site for each customer installation, the PDM can manage Numbers, software and devices for that site. The settings are saved in a database.

Note:

There is a subtle but important difference between loading and opening a site. When a site is opened, the **Site management** dialogue closes and it is possible to start working with the devices in the site; when a site is loaded, the **Site management** dialogue stays open, making it possible to continue with site management tasks, such as creating and deleting sites.

Figure 67: Site Management window



Create a New Site

1. In the File menu, click **Site management**. The **Site management** dialogue appears.

2. Click **New...**. The **Create site** dialogue appears.
3. Type a name for the site in the **Site name:** field and type a site description in the **Description:** field (optional).
4. Click **OK**. The **Create site** dialogue closes.
5. Click **Close**. The **Site management** dialogue closes.

Open a Site

1. In the **File** menu, click **Site management**. The **Site management** dialogue appears.
2. Select the site to be opened.
3. Click **Open**. The view in the main window changes to the newly opened site and the **Site management** dialogue closes.

Load a Site

1. In the **File** menu, click **Site management**. The **Site management** dialogue appears.
2. Select the site to be loaded.
3. Click **Load**. The view in the main window changes to the newly opened site.
4. Click **Close**. The **Site management** dialogue closes.

Delete a Site

1. In the **File** menu, click **Site management**. The **Site management** dialogue appears.
2. Make sure that the site to be deleted is not currently active. If it is active, load another site (see Load a Site).

   If there is only one site remaining, it cannot be deleted.
3. Select the site to be deleted.
4. Click **Delete**. The **Delete site** dialogue is opened.
5. Click **Yes**. The site is deleted.
6. Click **Close**. The **Site management** dialogue closes.

Import a Site

When importing a site, numbers with parameters and devices are imported. Templates, software and definition files are not imported.

1. In the **File** menu, click **Site Management**. The **Site Management** dialogue opens.
2. Click **Import...**. A File Browser window, **Import site**, opens.

3. Find and select the Site file (.ste) to be imported. Click **Open**.
4. The **Input** dialogue opens.

Figure 68: Input dialogue

5. Enter a name for the new site.
6. Click **OK**.
7. The site is imported to PDM.
8. Click **Close**

Export a Site

1. In the **File** menu, click **Site Management**. The **Site Management** dialogue opens.
2. Select the site to be exported.
3. Click **Export...**. A File Browser window opens.
4. Select a file name of the site (.ste) and where to save the file.
5. Click **Save**. The file is saved and the File Browser window closes.
6. Click **Close**

Numbers

Create New Numbers

1. Select the **Numbers** tab.
2. From the **Number** menu, click **New...**. Alternatively, right-click in the **Numbers** list and select **New...**. The **New Numbers** dialogue appears.
3. Select device type in the **Device type** list.
4. Select the parameter version in the **Parameter version** list. All parameters except Number specific parameters will be set to their default values.

5. Select which template to run on the Number. This is optional and therefore **None** can be selected.
6. If the Numbers need a prefix, add this in the **Prefix** text box.
7. If you want to create a single Number, select the **Single** option and enter the call number in the **Call number** text box. Continue with step 9 below.

   Note:

   The data in this text box is only a user-id will *not* be used for any dialling purposes. Though it is strongly recommended for easy identification here to enter the telephone's extension. But is is also possible to enter characters.
8. If you want to add a range of Numbers, select the **Range** option. Enter the start call number in the **Start call number** text box, and the end call number in the **End call number** text box.

   Note:

   The maximum range that can be added at a time is 100 Numbers.
9. Click **OK**. The dialogue closes and the new Number(s) show up in the list in the Numbers view.

Save a Number to database

If a device is online but its Number has not been saved to the database it is possible to do this.

1. Select the **Numbers** tab.
2. Select the Number.
3. In the **Number** menu, select **Save**, or Right-click on the Number and select **Save**.
4. The Number is saved to the database.

Edit Parameters

The **Edit Parameters dialogue** shows the set of parameters relevant to the Number that is being edited. The parameter groups are organized in a tree structure in the left pane, with the parameters in the current node in the right pane. The parameter list has one column with the parameter name, and another column gives the parameter value. This can be a numerical value, text or a choice (boolean values and some numerical values are presented as select boxes). Clicking in the column will give a short description of selected parameter.

1. Select the **Numbers** tab. The **Numbers** view appears.
2. Select the Number. The selected row is highlighted.
3. In the **Number** menu, select **Edit**. Alternatively, right-click and choose **Edit**, or double-click on the Number.

   The **Edit Parameters for *<Number>*** window opens, where ***<Number>*** is the current Number.

4. Select parameter in the left pane.
5. Make your changes on the **Value** row.

   When a parameter has been edited, the name of the node to which the parameter belongs changes to a blue colour.

   (Click **Cancel** if you want to undo all parameters edited since your last save and return to the main window.)
6. Click **OK** to save your changes.

Note:

If the Handset is used on an Integral system only the sound and alert settings for:

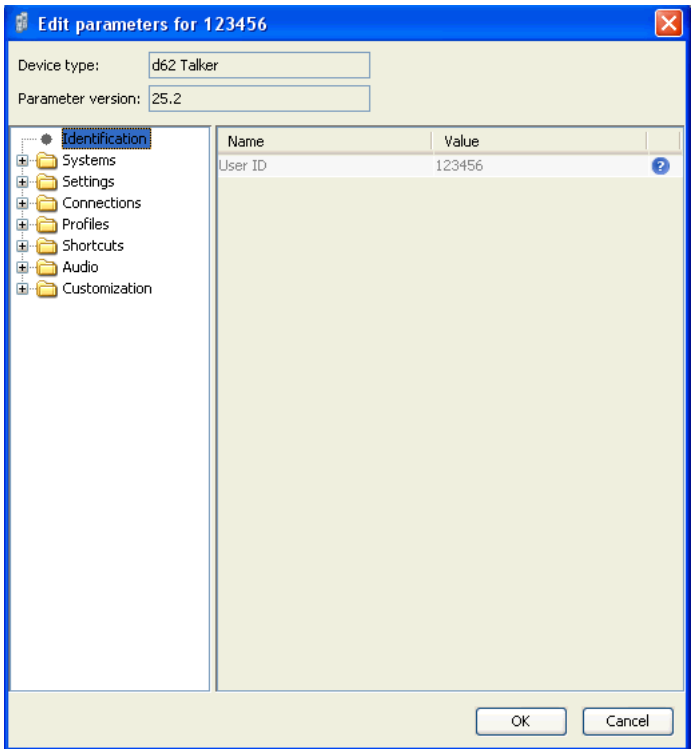
- Vibrating alert: on, off

- key sound: click, tone, silent

- ring type: normal short silent

will be valid. Other settings are ignored. This is also valid when configuring profiles.

Figure 69: Editing parameters in the PDM GUI



Note:

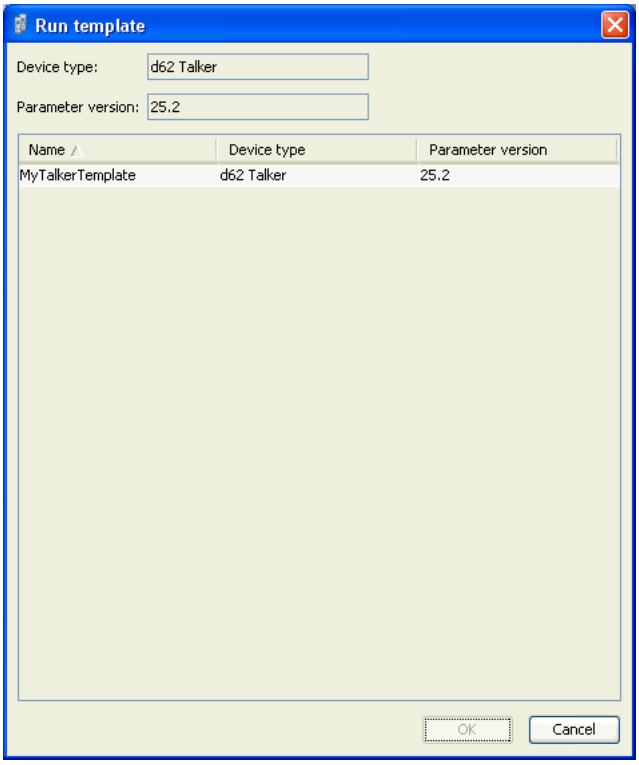
When you save the parameters, they are automatically sent to the device if it is connected.

Run a Template to Set Parameter Values

If a template has been created for a device type, it can be used to set the parameter values for a range of devices, or a single device. The command to use is Run template.

1. Select the **Numbers** tab. The **Numbers** view appears.
2. Select the Number or Numbers you wish to run the template on.
3. In the **Number** menu, click **Run template...**. Alternatively, right-click on the Number in the **Number** list and select **Run template...** from the menu that appears. The **Run template** window appears.

Figure 70: Selected template to run on one or several Numbers



4. Select a template from the **Template** list.

Note:
If multiple templates are selected only one of them will be executed.

5. Click **OK**. The **Run template** window closes.

   If the parameters in the database have been edited but not yet sent to the device it is indicated with **Not synched** or Update queued. This is not valid for devices that have not yet been logged in and associated for the first time.

If a Number has not been associated with the device, it is now possible to do so. Connect a device and associate it with a Number in the database. The parameters will automatically be sent from the PDM to the device. See Associate a Number with a Device on page 262.

Note:

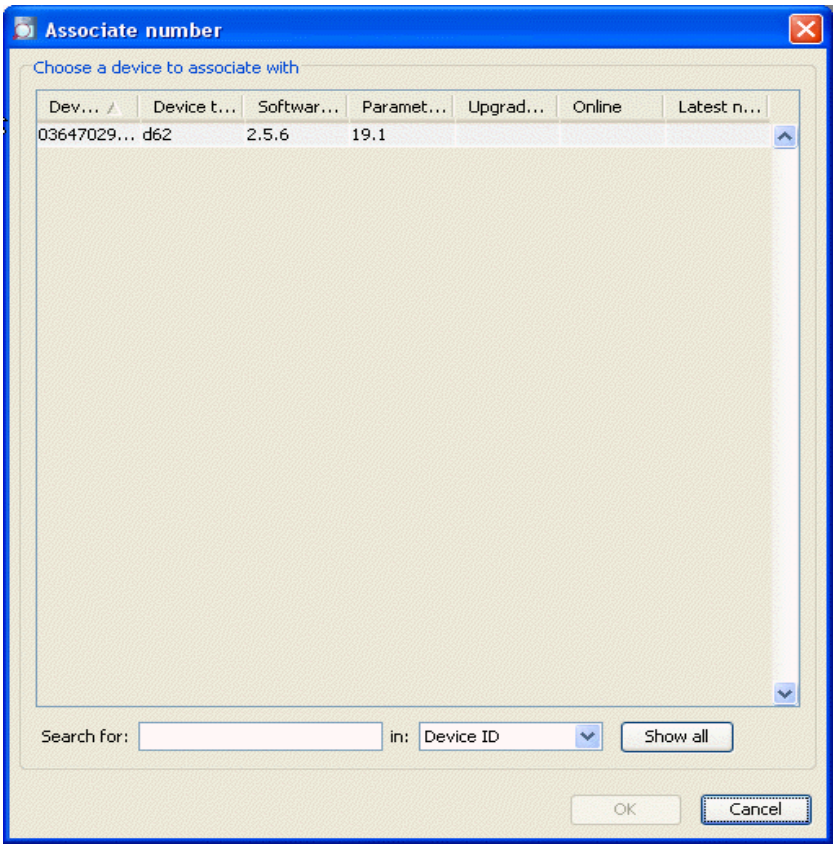
If a template has been created for a device model, it can be used to set the parameter values for a range of devices, or a single device.

Associate a Number with a Device

Before being able to to synchronize parameters between PDM and devices, it is necessary to associate a Number with the device. It is possible to enter several Device ID's in advance and to associate them with a Number at a later moment. See also Assign a Number on page 267.

1. Select the **Numbers** tab.
2. In the **Number** menu, select **Associate with device...**. The **Associate number** dialogue appears.

Figure 71: Associate number dialogue



3. Select the device you want to associate with in the list.

4. Click **OK**.

If the selected device is online, it will immediately be updated with the selected Number. If the selected device is not online, it will be updated the next time it is online.

It is possible to associate several Numbers with several devices simultaneously.

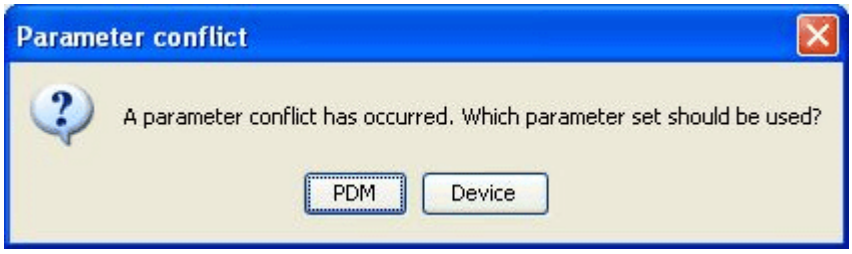
If a device is detected and the same Number has been used by another device in the system there will be a parameter conflict. A pop-up dialogue appears, asking the user to decide whether to use the Number settings in PDM or the Number settings in the device.

Note:

One situation when this parameter conflict will occur needs to be mentioned:
If a portable is damaged and the replacement portable is first registered in the base station with the same Number as the damaged portable, and then an attempt to register the new portable in PDM is made.
If “Device” is chosen in this situation, the phonebook belonging to the damaged portable and located in PDM will be deleted (and replaced with the empty phonebook in the replacement portable).
In this case, select “PDM” to transfer the phonebook of the damaged portable (located in PDM) to the new portable.

For more information about telephone replacement, see the Configuration Manual for respective telephone.

Figure 72: Parameter conflict dialogue



Delete a Number in the Site Database

1. Select the **Numbers** tab.
2. Select the Number you want to delete. The selected row is highlighted.
3. In the **Number** menu, select **Delete** or right click and select **Delete**.
4. In the **Delete Numbers** dialogue, click **Yes**.

The dialogue closes and the Number is deleted from the list.

Note:

If an online device is deleted it will stay in the list as online but not saved.

Rename a Number

1. Select the **Numbers** tab.
2. Select the Number you want to rename. The selected row is highlighted.
3. In the **Number** menu, select **Rename...** or right click and select **Rename...**. The **Rename number** dialogue opens.
4. In the **Rename number** dialogue, enter a new prefix (optional) and a new Number in the **New prefix** and **New number** text fields.
5. Click **OK**. The **Rename number** dialogue closes and the new Number appears in the list in the **Numbers** tab.

Copy a Number

1. Select the **Numbers** tab.
2. Select the Number you want to copy. The selected row is highlighted.
3. In the **Number** menu, select **Copy...** or right click and select **Copy...**. The **Copy Number** dialogue opens.
4. In the **Copy number** dialogue, enter a new prefix (optional) and a new Number in the **New prefix** and **New number** text fields.
5. Click **OK**. The **Copy number** dialogue closes and the new Number appears in the list in the **Numbers** tab.

Import Contacts

Note:

This feature is not available in all versions of PDM.

The contacts in a file containing contacts can be imported to PDM and synchronized with a handset. This feature enables transfer of contacts from older handsets.

1. In PDM, click on the **Numbers** tab.
2. Select a Number.
3. In the **Number** menu, click on **Import Contacts...**. The **Import Files** window appears.
4. Find and select a file containing contacts (.txt). Click **Open**.
5. The contacts in the imported file are synchronized with the handset.

Devices

A device can be a Avaya 3720/3725 DECT Telephone, a Rackmount Charger or an Advanced Charger.

All work with devices is performed from the **Devices** view.

- Devices can be added to a site by connecting the device to the PC.
- It is possible to transfer the information for a Number from one device to a new device.
- Devices can be reset to factory settings.
- Devices can be updated with new software.

Add Devices to a Site

Note:

Before connecting a device to the PDM, make sure the connection is set up according to the instructions in the device´s **Configuration or Installation Manual**.

If a range of new devices are to be added to a site, the easiest way is to:

1. Create a template with all common parameter settings for the site. See Create a Parameter Template on page 280.
2. Add a range of Numbers and run the template. See Create New Numbers on page 258 and Run a Template to Set Parameter Values on page 261.
3. Edit the parameters and change individual settings. See Edit Parameters *on page 259*.
4. Connect the physical devices, one after the other, and associate them with the Numbers in the site database. See Associate a Number with a Device on page 262.

A single device can be added in the same way.

Note:

It is not possible to change model of a device already added to the site. Instead, a new device of the desired model must be added to the site and the parameters set to the correct values.

Synchronize a Device

When a device is connected, it is synchronized with the associated Number in the PDM.

When parameters have been changed in a device, the device can be synchronized with the Number saved in the database. When a device is being synchronized, parameters that have been changed in the device are uploaded to the PDM, and parameters that have been changed in the PDM are sent to the device. If a parameter has been changed in both the device and the PDM, the setting made in the PDM will take precedence.

1. Select the **Numbers** tab.
2. Connect a device to the computer running the PDM. If the Number is saved, and it has a parameter definition, the device is automatically synchronized.

   While synchronizing, a progress bar and a text is shown.

Delete a Device in the Site Database

1. Select the **Devices** tab.
2. Select the device you want to delete. The selected row is highlighted.
3. In the **Device** menu, select **Delete** or right-click and select **Delete**.
4. In the **Delete Device** dialogue, click **Yes**.

The dialogue closes and the device is deleted from the list.

Note:
You cannot delete a device that is online.

Replace a Device

If a device shall be replaced with a new device, it is possible to transfer its associated Number to a new device. The new device must be of the same model as the old one.

1. If the device to be replaced is still working, make sure that it is synchronized.
2. Connect the new device to the PDM.
3. Associate the new device to the Number associated to the old device according to the instructions in Associate a Number with a Device on page 262. The Number will no longer be associated to the old device.

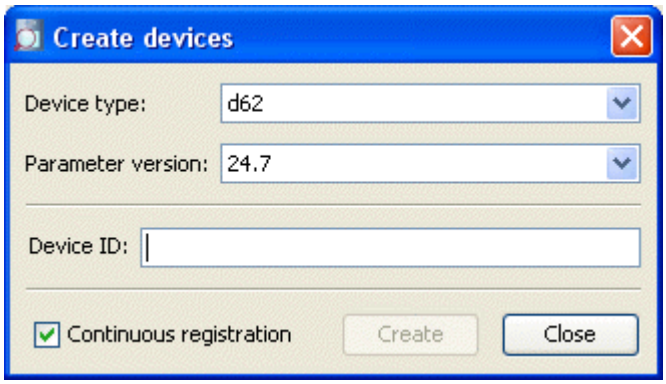
Create new Device

It is possible to enter several new Device ID's in advance into PDM for later association.

In order to simplify input when handling many devices, it is possible to use a bar code reader. The bar code reader should send a carriage return after each item, but it is not necessary. If carriage return is not sent, it is necessary to click **Create** after each read item.

1. Select the **Devices** tab.
2. In the **Device** menu, select **Add device**. The **Create devices** dialogue opens.

Figure 73: The Create devices dialogue



3. Select device type and parameter version.
4. Enter a Device ID for the device, manually or by using a bar code reader.
5. The **Continuous registration** box can be used to select whether the **Create devices** dialogue shall close after clicking **Create** or if it shall still be open.
6. If the bar code reader does not send carriage return, click **Create**.
7. Repeat 4 to 6 if more devices are to be created, otherwise click **Close**.

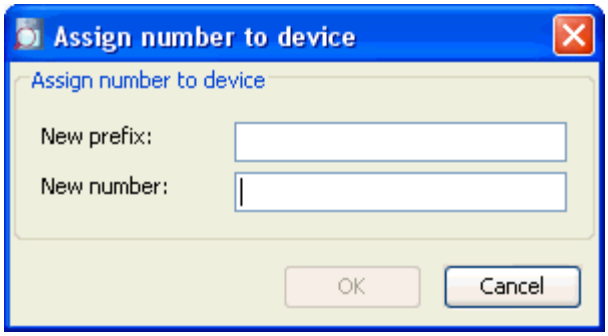
Assign a Number

It is possible to assign a Number to a device that has not yet been assigned a Number in PDM. This feature can be used if parameters have been changed on the device prior to connection to PDM.

Assign shall not be done on a device that already has a device ID. See also Associate a Number with a Device on page 262.

1. Select the **Devices** tab.
2. Select the device you want to assign a Number for.
3. In the **Devices** menu, select **Assign number**. The **Assign number to device** dialogue opens.
4. Enter a new number in the **New number** field. New prefix is optional. Click **OK**.

Figure 74: The Assign number to device dialogue



5. The new Number appears in the list in the **Devices** tab.

Factory Reset

Factory reset means that the device parameters will be reset to factory settings. The Number in the database that is associated with the device will not be affected.

Note:
The device must be online.

1. Select the **Devices** tab.
2. Select device(s) to be reset.
3. In the **Device** menu, click **Factory reset**. Alternatively, right-click on the device and select **Factory reset**.A message saying **Do you want to reset the selected device(s) to factory defaults?** will appear.
4. Click **Yes**.

File management

This chapters covers the File management for parameter definition files, software files, phonebook files and language files. Import and export of templates and numbers is described in Import and Export on page 276.

Import of translation files is described in Language settings on page 246.

The parameter definition file holds the definitions of all parameters for a specific version of a Number's parameter set. Updated software and new parameter definition files for devices and Numbers can be added to the PDM, see Import Parameter Definition files on page 269.

If there is a naming conflict when importing, a warning message is diplayed.

Definition File Version – Parameter Version

Both definition files and device software include parameters and are indicated by a version number.

Note:

The version of the definition file matches the version of the device software.

If a Number is updated with a new parameter version it does not always demand a new definition file. An old definition file can often be used but if new parameters have been added in the new parameter version these parameters will not be editable. The release note will tell you if a new definition file is needed to match the new parameters.

Example

If a parameter version for the Number is 2.5, then a parameter definition file with a version between 2.0 and 2.5 is required.

Import package files

Updated package files including new software and parameter definition files are distributed by your supplier. A package file can also contain template files. To import a package file please follow the steps to import parameter definition files (see below) or Import new Software for Devices on page 270.

Note:

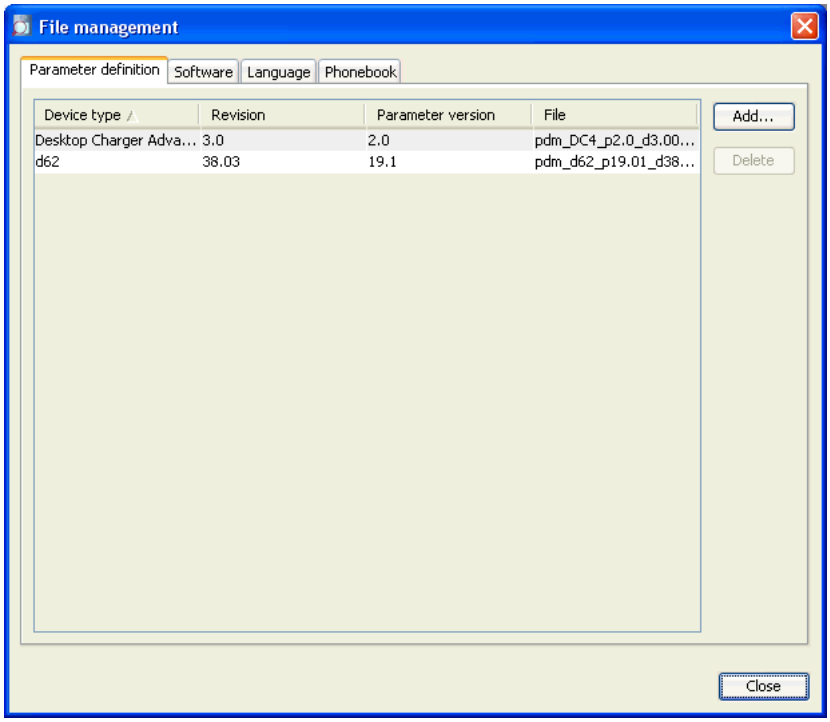
Parameter definition files (.def) and software files (.bin) may be included in package files (.pkg) or delivered as separate files.

Import Parameter Definition files

Updated parameter definition files are distributed by your supplier.

1. In the **File** menu, click **File management**. The **File management** window opens.
2. Click on the **Parameter definition** tab.
3. Click **Add**. The **Import files** window opens.
4. Select the definition files to be imported. Only files with a corresponding extension are shown, such as .def and .pkg.
5. Click **Open**.
6. Check that the newly imported definition files appear in the list.
7. Click **Close**.

Figure 75: File management window, Parameter definition tab

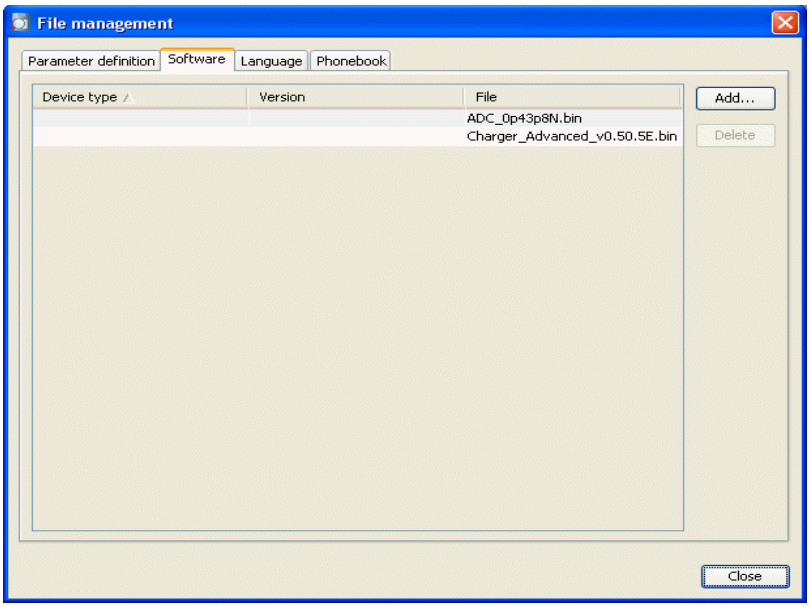


Import new Software for Devices

Updated software files are distributed by your supplier.

1. In the **File** menu, click **File management**. The **File management** window appears.
2. Click on the **Software** tab.
3. Click **Add**. The **Import files** window opens.
4. Select the software files to be imported.
5. Click **Open**.
6. Check that the newly imported software files appear in the list.
7. Click **Close**.

Figure 76: File managing window, Software tab



Import Language files

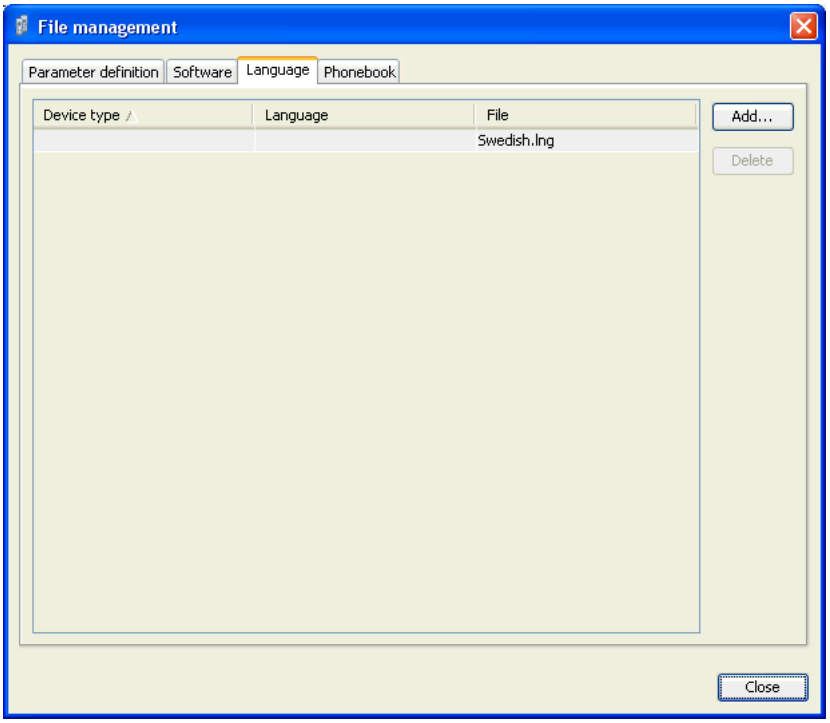
Note:

There is a difference between **`Language files`** (.lng) described in this section and **`Translation files`** (.xml) that are described in Language settings on page 246. Import of translation files are done via the **Options** menu.

Updated language files are distributed by your supplier.

1. In the File menu, click **File management**. The File management window opens.
2. Click on the **Language** tab.
3. Click **Add**. The **Import files** window opens.
4. Select the language files to be imported. Only files with a corresponding extension are shown, such as **.lng**.
5. Click **Open**.
6. Check that the newly imported language files appear in the list.
7. Click **Close**.

Figure 77: File management window, Language tab

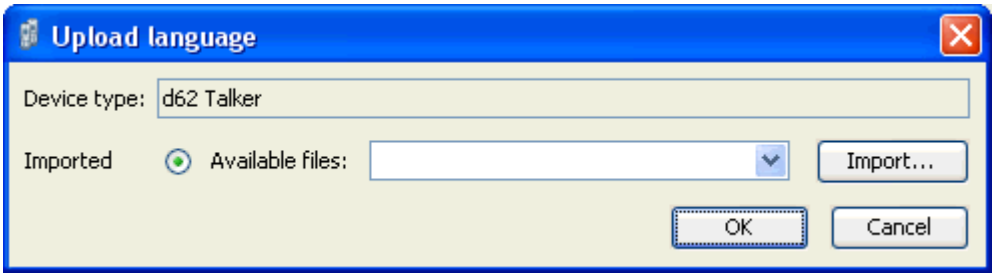


Upload a Language

It is possible to upload a language to portable devices that support Language Upload.

1. Select the **Devices** tab.
2. Select the device(s) to upload a language to. It is possible to select several devices, but only devices of the same Device Type can be selected.
3. In the **Device** Menu, select **Upload Language...**. The **Upload Language** dialogue appears.

Figure 78: The Upload language dialogue



4. Select which language to upload.

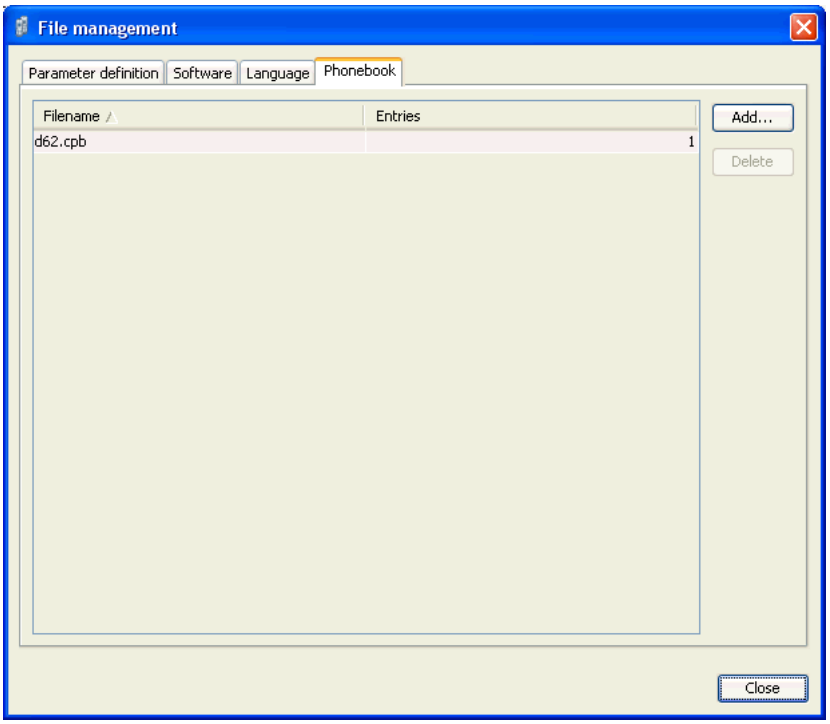
5. Click **OK**. The language is uploaded to the device.

Import Phonebook files

It is possible to import a phonebook file for later use.

1. In the **File** menu, click **File management**. The **File management** window opens.
2. Click on the **Phonebook** tab.
3. Click **Add**. The **import files** dialogue opens.
4. Select the phonebook files to be imported.Only files with a corresponding extension are shown, such as **.cpb**.
5. Click **Open**.
6. Check that the newly imported phonebook files appear in the list.
7. Click **Close**.

Figure 79: File management window, Phonebook tab



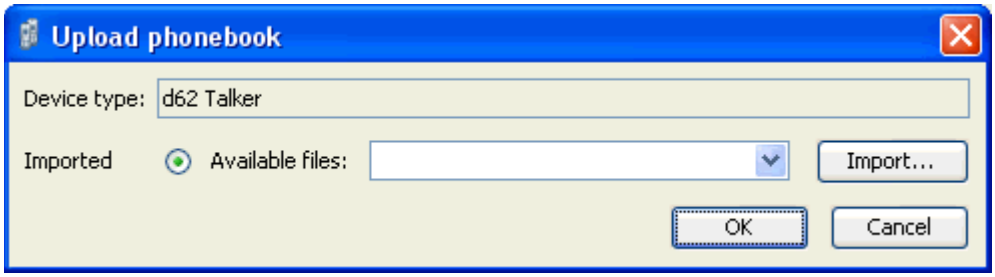
Upload a Phonebook

It is possible to upload a phonebook to portable devices that support Phonebook Upload.

1. Select the **Devices** tab.

2. Select the device(s) to upload a phonebook to. It is possible to select several devices, but only devices of the same Device Type can be selected.
3. In the **Device** Menu, select **Upload Phonebook...**. The **Upload Phonebook** dialogue opens.

Figure 80: The Upload phonebook dialogue



4. Select which phonebook to upload.
5. Click **OK**. The phonebook is uploaded to the device.

Note:
Uploading a new phonebook file will delete the old phonebook entries. Local phonebook entries will not be affected.

Upgrade a Device with new Software

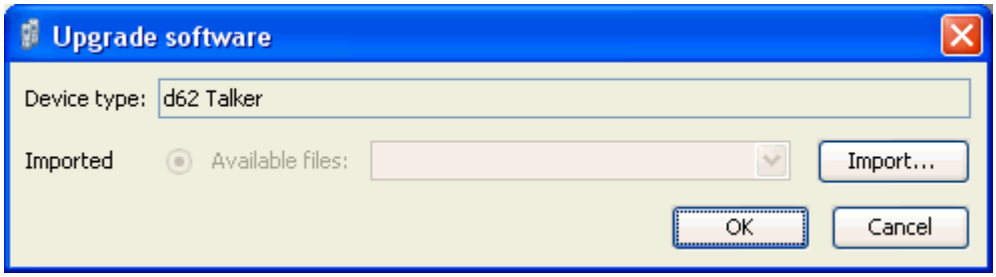
It is possible to upgrade the software in a device.

1. Select the **Devices** tab.
2. Connect a device to the PC.
3. Select the device. The selected row is highlighted. It is possible to select several devices, but only devices of the same Device Type can be selected.
4. In the **Device** menu, click **Upgrade**.

   Alternatively, right-click and choose **Upgrade**, double-click on the desired device, or click the **Upgrade** button in the toolbar.

   The view changes to the **Upgrade** dialogue.

Figure 81: Upgrade dialogue



5. In the **Upgrade** dialogue the following fields are shown:
   - Device type – shows the model of your device.
   - **Software** – The **Available software:** box contains previously imported software files (see Import package files on page 269); the latest used software file is selected by default.
6. If the software to be used for software upgrade is not available, it needs to be imported. If so, click **Import...**. The **Import software** dialogue opens. Locate the file and click **Open**. The software file is imported to PDM.
7. Select software to be used in the upgrade in the **Available software:** text box.
8. Click **OK**. The **Upgrade** window closes.
9. The software will be downloaded to the device. A progress bar in the Status column for the device shows the progress of the download.

   To cancel the upgrade, click **Device > Cancel upgrade** in the menu. Alternatively, right-click on the device in the device list and select **Cancel upgrade**.

   The device will restart automatically after a successful download and when the handset is idle.

Note:

The Handset will not restart if a missed call popup or a new message popup is active on the handset. This is not considered as an idle state.

Delete Parameter Definition Files

1. In the **File** menu, click **File management**. The **File management** window appears.
2. Click on the **Parameter definition** tab.
3. Select the definition files to be deleted.
4. Click **Delete**. The **Delete files** dialogue opens.
5. Click **Yes**.
6. Click **Close**.

Delete Software

1. In the **File** menu, click **File management**. The **File management** window appears.
2. Click on the **Software** tab.
3. Select the software to be deleted.
4. Click **Delete**. The **Delete files** dialogue opens.
5. Click **Yes**
6. Click **Close**.

Delete Language

Note:
This applies to ***language files*** (.lng). ***Translation files*** (.xml) are not deleted.

1. In the **File** menu, click **File management**. The **File management** window opens.
2. Click on the **Language** tab.
3. Select the Language to be deleted.
4. Click **Delete**.
5. In the **Delete files** dialogue, click **Yes**.
6. Click **Close**.

Delete Phonebook file

1. In the **File** menu, click **File management**. The **File management** window opens.
2. Click on the **Phonebook** tab.
3. Select the Phonebook file to be deleted.
4. Click **Delete**.
5. In the *Delete* **files** dialogue, click **Yes**.
6. Click **Close**.

Import and Export

Import and other file management of ***parameter definition files***, ***software files*** and ***language files*** is described in File management on page 268.

Import of ***translation files*** (.xml) is desrcibed in Language settings on page 246.

The purpose of exporting and importing Numbers and Templates is to be able to move Numbers and Templates to another site or to use at a later time. It is also possible to move between PDM and AIWS.

The parameter configuration in Numbers can be exported to a file. This file can be used by the supplier to pre-program devices before delivery to the customer.

If there is a naming conflict when importing a template, the new template is imported and the old template is deleted. If there is a Number conflict when importing Numbers, an error message is displayed.

Export Numbers to a File

It is possible to configure Numbers for a site and export the settings to a file. One or several Numbers can be selected.

The exported file can then be used when producing new devices for the customer.

Only Numbers stored in database can be exported.

There is no restriction on device type when exporting.

1. Select the **Numbers** tab. The **Numbers** view appears.
2. Select the Number (or Numbers).
3. In the **Number** menu, click **Export**.

   The **Export Numbers** dialogue appears. By default the file will be saved in the `My documents` directory with the name ***`[sitename]`*`.xcp`**. The application remembers the last location used though. You can select another name and directory.
4. Click **Save**.

Import Numbers

Updated Number files may be distributed by your supplier.

1. In the **File** menu, click **Import>Numbers...**. A File Browser window appears.
2. Select the Number files to be imported (*.xcp).
3. Click **Open**.
4. The Number files will be saved.

Import Templates

Updated Template files may be distributed by your supplier.

1. In the **File** menu, click **Import>Templates...**. A File Browser window appears.
2. Select the Template files to be imported (*.tpl).
3. Click **Open**.

4. The Template files will be saved.

Export Templates

It is possible to export template files. One or several templates can be exported.

1. Select the **Templates** tab. The **Templates** view appears.
2. Select the template (or templates) to be exported.
3. In the **Template** menu, click **Export...**.

   The **Export templates** dialogue appears. By default the file will be saved in the **`My documents`** directory or last used directory with the name Templates.tpl. You can select another name and directory.
4. Click **Save**.

Close the PDM

In the **File** menu, click **Exit**. The PDM shuts down.

Administration

Data Backup

All settings in the PDM, such as the configuration, the sites and the templates are stored as database files. It is recommended to do backups on a regular basis. When a backup is done as in 4.1.1, the following data is included: device software, definition files, templates, devices and Numbers including parameters.

Backup PDM Database Files

1. Close the PDM.
2. Locate the folder you want to backup. The files are saved in folders located in **C:\Documents and Settings*<user name>*\Application Data\Ascom\WinPDM\.**
3. Copy the selected folder to, for example, a CD or a network drive.
4. The PDM can now be started again.

Restore PDM Database Files

1. Close the PDM.
2. Retrieve the saved copy of the folder.
3. Copy the folder to the respective folder in **C:\Documents and Settings*<user name>*\Application Data\Ascom\WinPDM\.**
4. The PDM can be started again.

Templates

Templates are a collection of user defined parameter values. These templates can be used to create common settings to be used on several devices of a certain device type.

Note:

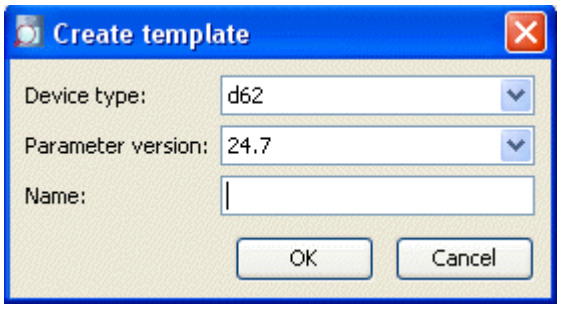
Templates created in one site are also selectable in the other sites used in PDM.

Create a Parameter Template

It is usually desirable to create a customized parameter template that can be applied to devices of a certain device type.

1. Select the **Templates** tab.
2. In the **Template** menu, click **New**. The **Create Template** dialogue appears.

Figure 82: Create Template dialogue

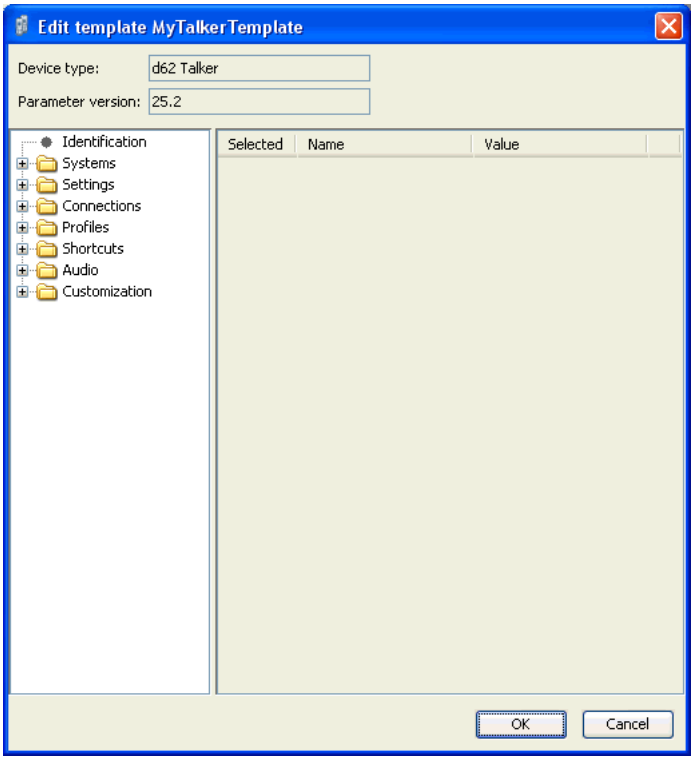


3. Select device type and parameter version, type in a name for the template, and click **OK**. The view switches to the **Edit Template** parameter view.

Note:

If you cannot find your device type and/or parameter version in the list, PDM needs to be updated with new parameter definition files, see Import Parameter Definition files on page 269.

Figure 83: Edit Template parameter view



4. Select the parameters you want to be saved in the template by selecting the checkbox to the left of each parameter. Change the parameters to the desired values.
5. Click **OK**.

Create a Parameter Template from a Number

It is also possible to create a template from a cordless telephone in the PDM.

1. Select the **Numbers** tab.
2. Mark the **Number** you want to use.
3. Right click on the **Number** and select **Use as template...**
   The **Enter template name** dialogue appears.
4. Enter a name for the template.
5. Click **OK**. The **Edit template** dialogue opens.
6. Continue with 4 to 5 in Create a Parameter Template on page 280.

Note:

When the **Edit template** window is opened from the **Use as template** command, an extra drop-down list, **Select** is shown in the bottom left corner. This setting decides which parameters that shall be copied from the Number. If **All parameters** is selected, the synchronization time will be longer.

It is also possible to create a template from a telephone that is online but not stored in the database. The template will contain all parameters for the telephone except for those that are Number specific.

Rename a template

1. Select the **Templates** tab.
2. Select the template you want to rename. The selected row is highlighted.
3. In the **Template** menu, select **Rename...** or right click and select **Rename...**. The **Rename template** dialogue opens.
4. In the **Rename template** dialogue, enter a new name in the **New name** text field.
5. Click **OK**. The **Rename template** dialogue closes and the new name appears in the list in the **Templates** tab.

Copy a template

1. Select the **Templates** tab.
2. Select the template you want to copy. The selected row is highlighted.
3. In the **Template** menu, select **Copy...** or right click and select **Copy...**. The **Copy template** dialogue opens.
4. In the **Copy template** dialogue, enter a new name in the **New name** text field.
5. Click **OK**. The **Copy template** dialogue closes and the new template appears in the list in the **Templates** tab.

Edit a template

1. Select the **Templates** tab.
2. Select the template you want to edit. The selected row is highlighted.
3. In the **Template** menu, select **Edit...** or right click and select **Edit...**. The **Edit template** window opens.
4. In the **Edit template** window, edit the parameters that shall be edited.
5. Click **OK**. The **Edit template** window closes.

Delete a template

1. Select the **Templates** tab.
2. Select the template you want to delete. The selected row is highlighted.
3. In the **Template** menu, select **Delete**, or right click and select **Delete**, or press the Delete button. The **Delete template** dialogue opens.
4. Click **Yes**. The **Delete template** dialogue closes and the template is deleted.

Troubleshooting

See Portable Device Manager (PDM) on page 509.

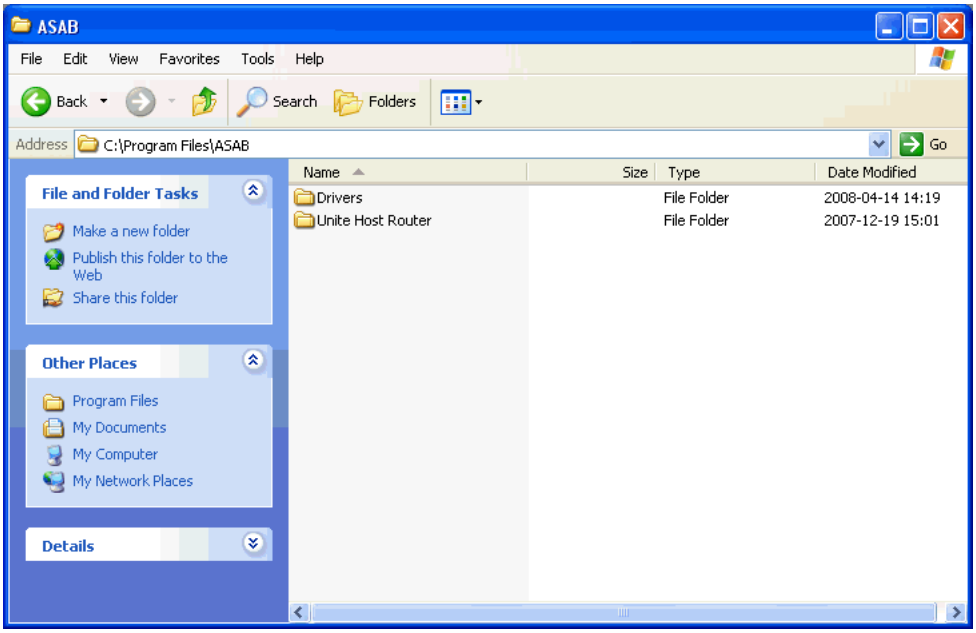
Uninstall the PDM

1. In the Windows **Start** menu, select your PDM application.
2. Select **Uninstall**. The PDM application is uninstalled.
3. Open the **Control Panel > Add or Remove Programs**.
4. Mark **Unite Host Router** and click **Add/Remove**.
5. Unite Host Router may have left configuration files. If you want to remove these files you can remove that folder.

   Note:

   The Unite Host Router may be used for other programs on your computer.
6. Open the installation folder for the Unite Host Router, `C:\Program Files\ASAB`, and remove the `Unite Host Router` folder manually.

Figure 84: Selected elements in the installation folder



PDM Keyboard shortcuts

The following table shows the keyboard shortcuts that can be used in PDM.

General

Shortcut	Description
Ctrl + H	Opens the File management dialogue
Ctrl + Tab	Switch tab
Alt + F4	Close the application

Devices

Shortcut	Description
Ctrl + N	Add a new device
Enter	Upgrade the selected device(s)
Delete	Delete the selected device(s)
Ctrl + F	Find a device

Numbers

Shortcut	Description
Ctrl + N	Add a new Number
Enter	Edit the selected Number
Ctrl + C	Copy the selected Number
F2	Rename the selected Number
Ctrl + S	Save the selected Number to the database
Delete	Delete the selected Number from the database
Ctrl + F	Find a Number

Templates

Shortcut	Description
Ctrl + N	Add a new template
Enter	Edit the selected template
Ctrl + C	Copy the selected template
F2	Rename the selected template
Delete	Delete the selected template
Ctrl + F	Find a template

File types

In this appendix, the different file extensions that are used in PDM are explained. System files are not described.

File type	Extension	Description
Software file (devices)	bin	Software for devices
Phonebook file	cpb	Company Phonebook file for portable devices.
Parameter Definition file	def	Including all possible settings for a certain device type for a certain version.
Language file	lng	Language file for cordless telephones.
Package file	pkg	Archive that can include different file types such as parameter definition files (.def), software files (.bin) and template files (.tpl).
Site file	ste	Storage for site specific data. These files may not be edited manually. Used only in the PDM not in AIWS.
Template file	tpl	Contains one or more exported templates.
Number file	xcp	Exported Numbers.
Translation file	xml	eXtensible Markup Language. Language file for PDM.

Installing and operating AIWS

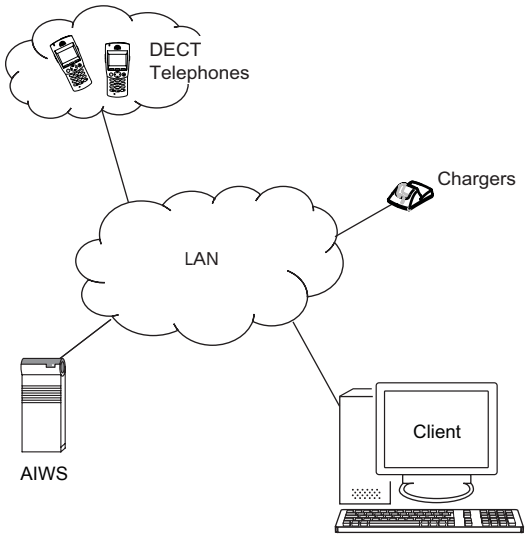
Introduction

Avaya In-Building Wireless Server (AIWS) is a server for handling wireless services and messaging. It is running on a solid state Elise 2 Server (AIWS Hardware) (AIWS hardware).

This chapter describes the installation and configuration of AIWS plus operation of the system. The main functionality is:

- On-site and remote administration of cordless telephones and chargers
- Parameter configuration and software download to cordless telephones and chargers
- Parameter configuration and software download to chargers
- Supervision of chargers
- Central phonebook application for cordless telephones
- Text messaging between cordless telephones

Figure 85: AIWS in a system.



AIWS provides a generic application for managing portable devices and chargers in wireless systems.

AIWS makes it possible to edit parameters and update software in the devices. It saves parameters and software for all devices in a database. All devices are updated remotely from AIWS.

In IP-DECT systems cordless telephones can be accessed by over the air administration that is configured in the IPBS Master by default. In other systems for remote configuration the cordless telephones need to be plugged into an Advanced Charger or Rackmount Charger connected to the Ethernet.

AIWS also includes a phonebook which can be accessed from the telephones. The number of entries in the phonebook depends on whether the internal database or an external database is used as phonebook source.

Additionally LDAP access to an existing company phonebock server is supported.

This chapter is intended as a guide for installation, maintenance and troubleshooting purposes and is relevant for:

- Installation and configuration, administrator rights
- Daily operation of the system, user rights

Items

Items for AIWS:

- WSM-MVB, AIWS Basic, including ELISE2, power supply and licence
- WSM-MVS, AIWS Standard, including ELISE2, power supply and licence
- WSM-MVP, AIWS OAP, including ELISE2, power supply and licence
- WSM-MVE, AIWS Enterprise Management, including ELISE2, power supply and licence

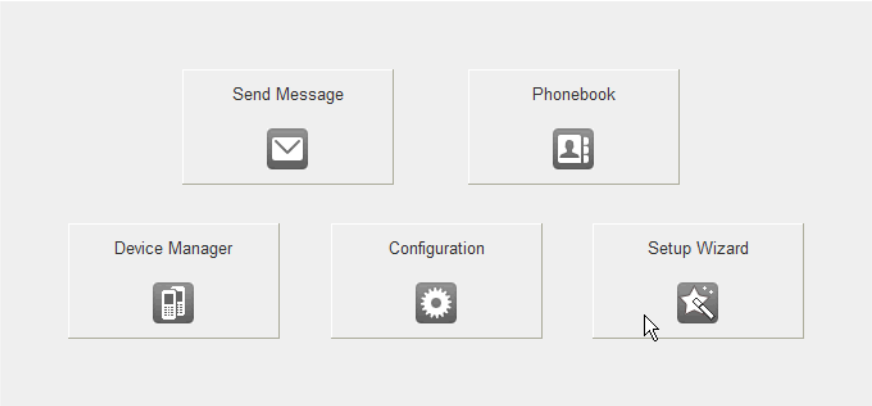
Note:
Not all functionality described in this document is available in all variants.

For details regarding items and technical specifications, refer to Avaya In-Building Wireless Server (AIWS) on page 483.

Overview

From the AIWS start page it is possible to select different functionality modules.

Figure 86: AIWS start page



- Send Message, see Operation - Messaging on page 314.
- Phonebook, see Central Phonebook administration on page 292.
  Describes how to handle phonebook entries.
- Device Manager, see Device Manager on page 322.
  Describes device management.
- Configuration, see Configuration Page on page 308.
  Setup page for the AIWS settings.
- Setup Wizard, see AIWS Setup Wizard and Configuration on page 312.
  The first time and as long as AIWS is not configured, the setup wizard will start automatically.

How to Use this Chapter

This chapter is used for the installation and configuration of the product, as well as for the administration and daily operation.

Note that AIWS is a complex system and that there are many alternatives when setting up a system. Therefore the manual describes the possible settings and how to set them.

In order to simplify, for example an installation, use the following steps:

Installation and Setup

- For installation and basic configuration, refer to chapters
  - Installation and Configuration on page 294
  - AIWS Setup Wizard and Configuration on page 312

Charger Installation

Follow the instructions in the chapter for the charger.

Recommended Work Flow for telephone installation

The recommended work flow depends on what type of telephones that are used.

- DECT telephones when adding new telephones
- DECT telephones when telephone is up and running

Recommended work flow when adding new DECT telephones

1. Install and configure AIWS, see Installation and Configuration on page 294.
2. Create a template with settings common for all devices at the site, see Create a Parameter Template on page 329.
3. Add a range of Numbers to the site, see Create New Numbers on page 333. Run the template.
4. Connect the telephone to AIWS. The telephone is shown as Online (✓) in the Devices view.
5. In the Numbers view, right click and associate the Number, see Associate a Number with a Device on page 337.
6. Register the telephone in the PBX

Recommended work flow for DECT telephones that are up and running

1. Install and configure AIWS, see Installation and Configuration on page 294.
2. Connect the telephones to the AIWS. When connected, the Numbers are shown as Online (✓) in the Device Manager.
3. Right click on the entries and Save.

Central Phonebook administration

- For administration of the central phonebook, refer to chapter Phonebook Administration on page 316.

Daily operation

- For the daily operation i.e. creating and sending messages, refer to chapter Operation - Messaging on page 314.

Included in the delivery

- Elise 2 Server (AIWS Hardware)
- "Getting started" instructions leaflet
- Ordinary RJ45 (straight through pinouts) network cable for connection to the LAN
- Licence certificate

Technical Solution

AIWS consists of a server and a client part. The server runs on the Elise 2 Server (AIWS Hardware) and is configured from a web interface. The Java based client is run on a PC connected to the Local Area Network (LAN) and is loaded from the server (Device Manager).

Requirements

Refer to Avaya In-Building Wireless Server (AIWS) on page 483.

Installation and Configuration

After installing the AIWS, the basic configuration is easily done with the help of a setup wizard. The wizard includes all basic settings needed to get the AIWS up and running.

Required Information

Make sure the following information is available:

Information required for the Installation

- MAC address – found on the licence certificate enclosed in delivery
- An IP address is needed, see leaflet or Getting Started on page 412

Information required for the Configuration

- Licence number – found on the licence certificate enclosed in delivery
- Network parameters – ask your network administrator
- Type of connected wireless phone system
- IP address to connected system (if connected via IP)
- Other messaging systems to send messages to (optional)
- LDAP properties if an LDAP server is used for Central Phonebook requests (optional)

Hardware Installation and Configuration

For information on installation and configuration Elise 2 Server (AIWS Hardware), see Installing Elise 2 Server (AIWS Hardware) on page 421.

Note:

Attach the ferrite bead on the power supply cable. Follow the enclosed assembly card for EMC protection, M0271500.

Software Installation

For information on the software installation see Maintenance Information on page 449. Also see Getting Started on page 412.

Configuration

AIWS Setup

When accessing AIWS the first time, follow the instructions in Getting Started on page 412.

Note:

The IP address must not change during operation because renew of IP address via DHCP is not handled. Other equipment connected to this product also expects a fixed IP address in some cases. If the IP plan is changed, this product must be restarted to update the IP address. Otherwise there is a risk for IP address collision.

For information about Power Down and Restart, see Power Down and Restart of Elise 2 Server (AIWS Hardware) on page 425.

Software Configuration

1. Log in to AIWS (http://xxx.xxx.xxx.xxx) and click on **Device Manager**.
2. Upload definition files. The definition files are usually included in a package file. See Import new Packages on page 343 for more information. A package file contains a definition file (.def). It may also contain software for the devices (.bin) and a template (.tpl). You may have to contact your supplier for the latest updates.

   If the definition file shall be imported as a separate file, see Import Parameter Definition Files on page 343for more information.You may have to contact your supplier for the latest updates.

How to work with Numbers is described in chapter Numbers on page 333.

Mounting

For mounting, see Installation on page 430.

Update of AIWS

Update of software is done via the web interface.

There are two choices, **Install software** and **Install image**.

If new software is installed by doing an update of AIWS, using an .eas file, information stored in the database will not be overwritten.

If a new image file is installed, using an .img file, the database information is deleted, and software and definition files are removed.

For instructions on how to upgrade, both .eas and .img files, see Updating Application Software on page 449. It is recommended to do a backup before upgrading.

Make sure no Device Manager client is open during an update of the AIWS. It is also important that no ftp client is logged in to the AIWS. If the Microsoft Internet Explorer is used as ftp client, close it before upgrade.

Note:

Customized NetPage GUI will be overwritten when upgrading. See also Update the User Interface after a new AIWS Release on page 401

Multiple AIWS configuration

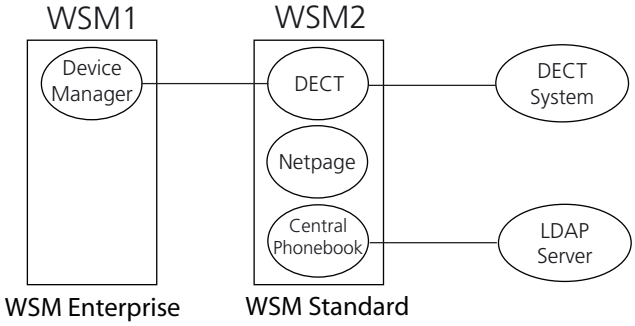
For some situations, there is a need to configure more than one AIWS in a system. This chapter presents examples for multiple AIWS configuration. Examples of functionality distributed on different AIWS's are Device Management, Central Phonebook and Netpage Messaging.

For detailed instructions on how to do these settings, refer to the corresponding chapters in this manual.

Functionality distributed on two AIWS modules

A system configuration with two AIWS's is required when there are more than 120 cordless telephones simultaneously in the system, and Central Phonebook with LDAP/TFTP or Netpage Advanced is used.

Figure 87: Example of a multiple AIWS solution with Device Handling on one AIWS and DECT interface on another AIWS



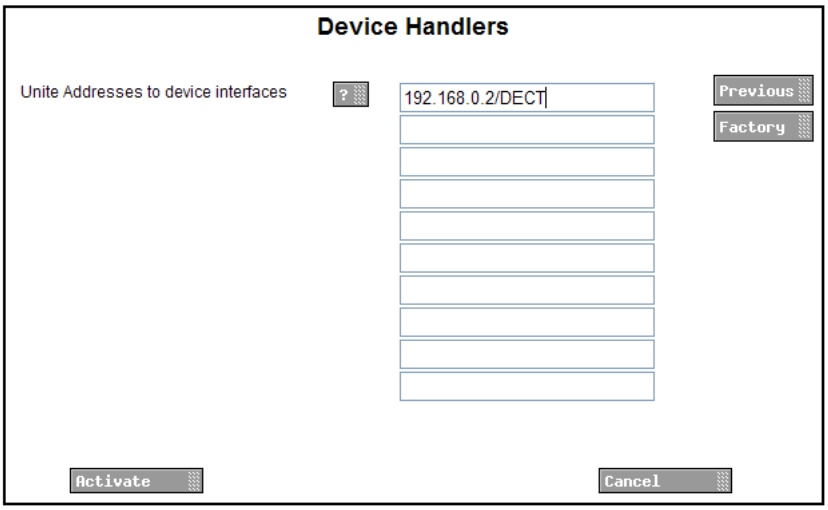
Basic configuration for the setup

The basic configuration for this setup is described below.

- AIWS1 (Enterprise)
  This setting is done in the **Configuration** page, not in the Setup Wizard.
  - In **Configuration > Other Settings > Advanced Configuration > Device Management**:
    Replace the address `127.0.0.1/DECT` with `<IP address of AIWS2>/DECT`, that is, if AIWS2 has the IP address `192.168.0.2`, change to `192.168.0.2/DECT`.
  - Set forwarding for Netpage:
    In **Configuration > Other Settings > Advanced Configuration > Other > UNS > Operating mode**:

    Operating Mode shall be set to Forwarding. **IP address of forward destination UNS** shall be set to the IP address of the AIWS with the DECT connection (here AIWS2: 192.168.0.2). Click **Activate**
  - Disable the DECT interface on the AIWS1 because it's not used. If the DECT interface is disabled the AIWS will not show any error logs, because of an non connected DECT interface. Select **advanced configuration > general settings > view advanced parameters.** Set DECT interface to **disable**.

Figure 88: Setting the IP address



- AIWS2 (Standard)
  - DECT and Central Phonebook connection are configured in the AIWS Setup Wizard.
  - In **Configuration > Other Settings > Advanced Configuration > Device Management**:
    Remove all IP addresses.

Migration to a double AIWS solution

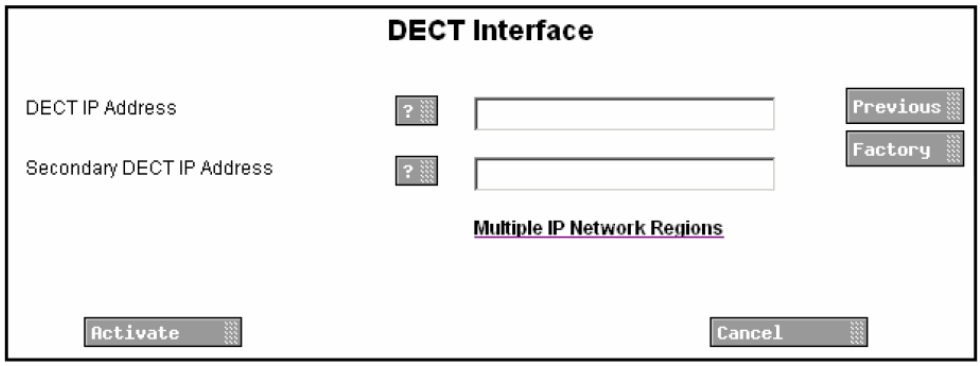
This example assumes that the original system uses one AIWS Enterprise and this single AIWS handles both Device Management and the connection to DECT. An additional module, AIWS Standard shall now be added to the system.

One reason for this migration is to configure the more business critical applications such as Netpage and Central Phonebook on one AIWS and the less critical application Device Management on another.

Change the following settings in the original AIWS:

- AIWS Enterprise (AIWS1, original AIWS)
  - In **Configuration > Other Settings > Advanced Configuration > Device Management**:
    Replace the address **`127.0.0.1/DECT`** with the IP address of AIWS2 plus **`/DECT`**, that is, if AIWS2 has the IP address **`192.168.0.2`**, change to **`192.168.0.2/DECT`**.
    Click **Activate**.
  - In **Configuration > Other Settings > Advanced Configuration > DECT Interface > IP-DECT**:
    Click "Factory" to remove IP addresses. Click **Activate**.

Figure 89: Removing DECT IP addresses.



For settings in the added AIWS, see above.

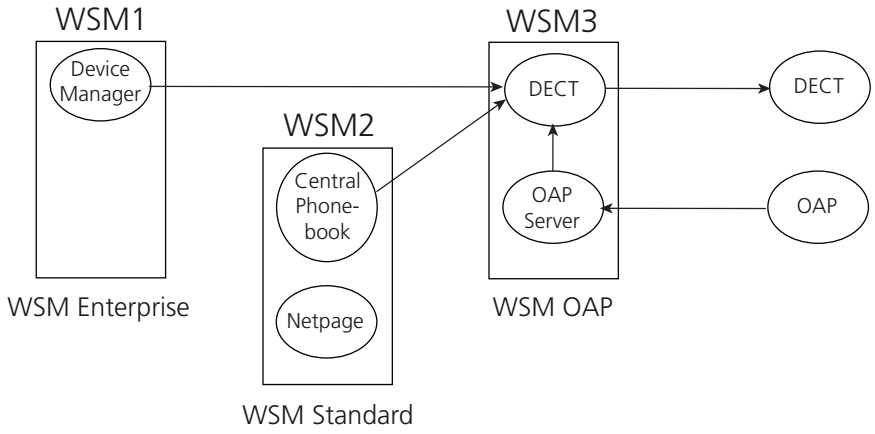
Functionality distributed on three AIWS modules

A system configuration with three AIWS's is required when the following three conditions exist:

- there are more than 120 cordless telephones simultaneously in the system
- an external application is connected, for example using OAP
- Central Phonebook with LDAP/TFTP or Netpage Advanced is used

An example presenting a distributed solution is shown in figure 90.

Figure 90: Example of a multiple AIWS solution with functionality distributed on three AIWS's



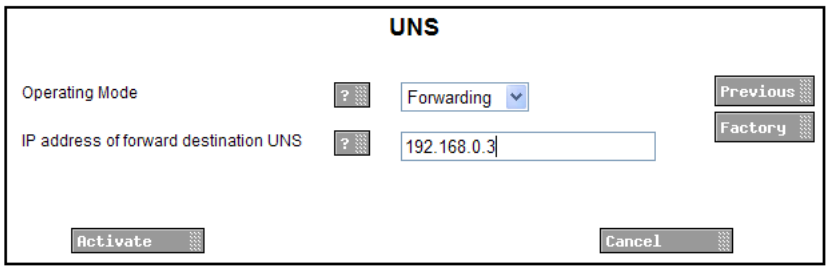
Basic configuration for the setup

The basic configuration for this setup is described below.

- AIWS1 (Enterprise)
  - In **Configuration > Other Settings > Advanced Configuration > Device Management**:
    Replace the address of AIWS2 **`192.168.0.2/DECT`** with the IP address of AIWS3 plus **`/DECT`**, that is, if AIWS3 has the address **`192.168.0.3`**, change to **`192.168.0.3/DECT`**.
  - Set UNS Default Category for messaging to function:
    In **Configuration > Other Settings > Advanced Configuration > Other > UNS > Default category**:
    Enter the IP address and name of the messaging handler, here "192.168.0.3" and "DECT".
    Click **Activate**.
  - Disable the DECT interface on the AIWS1 because it's not used. If the DECT interface is disabled the AIWS will not show any error logs, because of an non connected DECT interface. Select advanced configuration - general settings -view advanced parameters. Set DECT interface to **disable**.
- AIWS2 (Standard)
  - In **Configuration > Other Settings > Advanced Configuration > Device Management**:
    Remove all IP addresses.

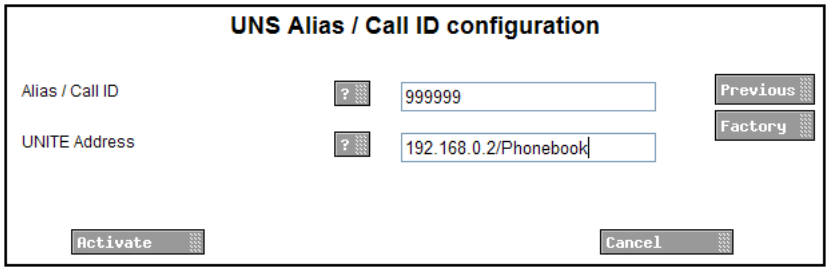
- Set UNS Default Category for messaging to function:
  In **Configuration > Other Settings > Advanced Configuration > Other > UNS > Default category**:
  Enter the IP address and name of the messaging handler, here "192.168.0.3" and "DECT".
  Click **Activate**.
- Disable the DECT interface on the AIWS1 because it's not used. If the DECT interface is disabled the AIWS will not show any error logs, because of an non connected DECT interface. Select advanced configuration - general settings -view advanced parameters. Set DECT interface to **disable**.

Figure 91: Setting UNS



- AIWS3 (OAP)
  - The DECT connection is configured in the AIWS Setup Wizard.
  - In **Configuration > Other Settings > Advanced Configuration > Device Management**:
    Remove all IP addresses.
  - In **Configuration > Other Settings > Advanced Configuration > Other > UNS > Alias / Call ID > 999999**:
    In the **UNITE Address** field, set to the IP address of AIWS2 plus **/Phonebook**, that is, if AIWS2 has the address **192.168.0.2**, set to **192.168.0.2/Phonebook**.

Figure 92: Setting Unite IP address



Migration to a triple AIWS solution

This example assumes that the original system uses one AIWS Enterprise and one AIWS Standard as in Functionality distributed on two AIWS modules on page 296. The AIWS Enterprise (AIWS1) handles Device Management. The AIWS Standard (AIWS2) handles Netpage and the connection to DECT. An additional module, AIWS OAP shall now be added to the system.

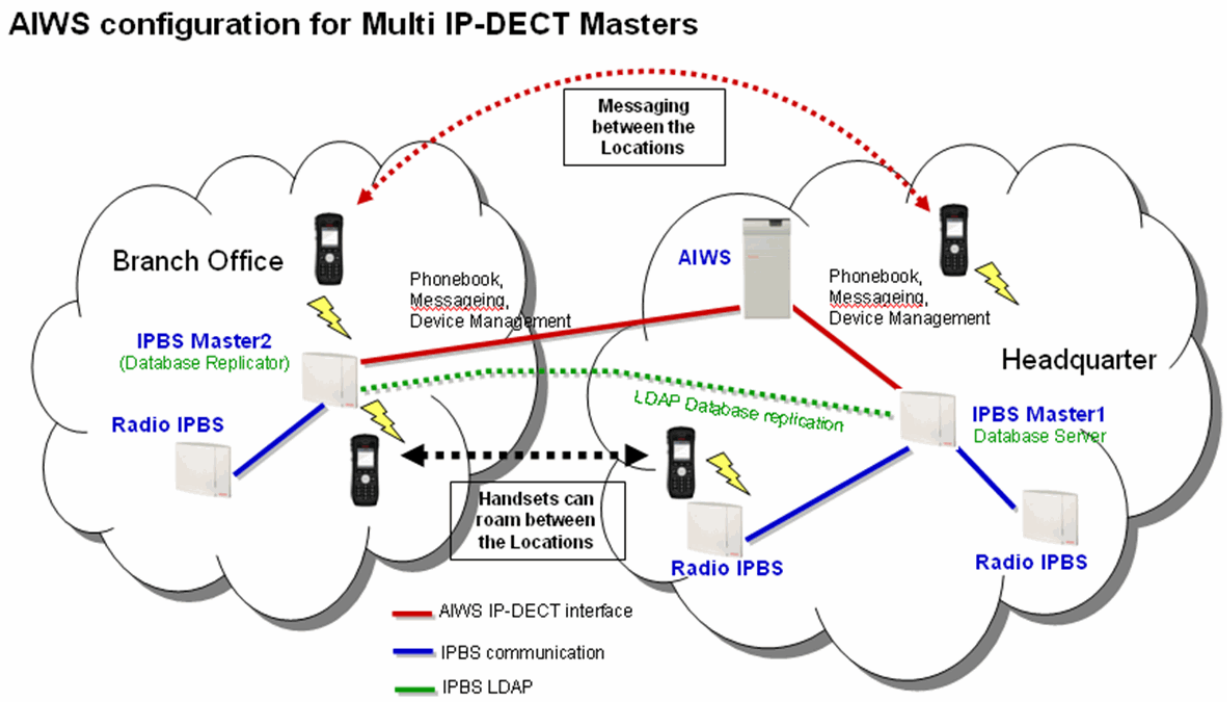
One reason for this migration is to configure the external application which here is considered to be the most business critical application on one AIWS and the less critical applications Netpage, Phonebook and Device Management on the another two AIWSs.

Change the following settings in the original AIWSs:

- AIWS Enterprise (AIWS1):
  - In **Configuration > Other Settings > Advanced Configuration > DECT Interface > IP-DECT**:
    Click **Factory** to remove IP addresses. Click **Activate**.
- AIWS Standard (AIWS2):
  - In **Configuration > Other Settings > Advanced Configuration > DECT Interface > IP-DECT**:
    Set the IP addresses for **DECT IP Address** and **Secondary DECT IP Address** to `0.0.0.0`
  - In **Configuration > Other Settings > Advanced Configuration > Other > UNS > Default category**:
    Enter the IP address and name of the messaging handler, here **192.168.0.3** and **DECT**. Click **"Activate"**
  - In **Configuration > Other Settings > Advanced Configuration > Device Management**:
    Remove all IP addresses.

For settings in the added AIWS, see above.

AIWS configuration for Multi Base Station Masters



The AIWS is able to support multiple Base Station Masters. This configuration offers

- Messaging from AIWS web page to handsets independently from the connected Base Station Masters
- Messaging from handset to handsets independently from the connected Base Station Masters
- A central phonebook can be used in all offices. Digit manipulation for Phonebook queries will be supported according to the location of the connected master (in first step this will only be supported for the LDAP phonebook).
- Centralized device management for all connected devices on different Master Base stations

Beside other basic configuration of the AIWS and IPBS Master and Standby Master the following steps are recommended to support a multiple Base Station Masters configuration.

On the AIWS:
(If a multi AIWS configuration is used this needs to be done on the device running the IP-DECT interface):

- Open the advanced configuration page: On the AIWS start page, select **Configuration**. The **AIWS Configuration** page opens. Select **Other Settings** > **Advanced Configuration**. The **AIWS Advanced Configuration** page opens.

- In IP **-DECT** under **DECT Interface** remove the entries (or just configure to 0.0.0.0) for **IP-DECT IP address** and **Secondary IP-DECT IP Address**. Set multiple Locations (former IP-Regions) to **Yes**
- In **Phonebook** select **Location settings** (former IP-Region settings). Set Digit Treatment to enable. Now configure the digit treatment settings. For each Location with different digit treatment rules an own entry using the appropriate Location ID (former IP-Region ID) needs to be created. Each IPBS Master needs to refer to one of these Location IDs. IPBS Masters and Standby Masters in the same Location area can refer to the same Location ID. It's recommended to use the same Location IDs as used on the Communication Manager side (IP Region page).
- In **UNS** under **Other** select **Default Category**. Make sure the **Messaging handler service name** is set to **DGH** (Device Group Handler).

On AIWS device manager:

- Make sure that the following two entries are identically:
  - The entry in the **Number** field of a handset device configured in the **Numbers** tab and
  - the **Number** (extension number) of the handset assigned in the IPBS Master **Users** tab.

  Otherwise the messaging and centralized phonebook access won't work. This restriction only exists in systems using multi IPBS Masters on one AIWS.

On each Base Station Master and Standby master:

- In **UNITE** > **SMS**, you will need to configure the Location ID (former IP-Region ID) according to the digit treatment rules for the corresponding Location configured on the AIWS.

Note:

Note: In the Standby Master it's recommended to use the same Location ID as its Master Base Station is configured.

Administration

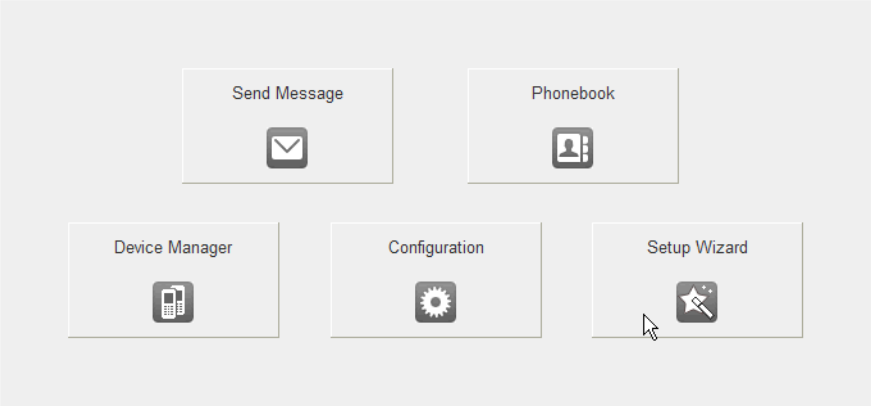
Data Backup

All settings in AIWS are stored as database files. It is strongly recommended to backup these files on a regular basis, see Backup the Configuration on page 373.

AIWS General

Authentication Levels and Default Passwords

Figure 93: AIWS start page



AIWS has different authentication levels:

- Using the *Send Message* function, i.e. creating and sending messages can be done default be done by any user in the system and requires no password. However, NetPage can be password protected.
- *User* rights is required for the administration of the phonebook. Default user name and password are “user” and “password”.
- *Administrator* rights is required for the setup, the configuration and administration of AIWS, simple troubleshooting and changing passwords (except for the sysadmin password). Default user name and password are “admin” and “changeme”.
- *System Administrator* rights is used for advanced troubleshooting, gives access to all administration pages and the permission to change all passwords. Default user name and password are “sysadmin” and “setmeup”.
- Auditor rights gives basically the same access as Administrator rights, but without permission to alter values. There is no access to the Setup Wizard or the Device Manager. Default user name and password is "auditor" and "readonly".

For information about password protection of Netpage, see Password Protected Access to NetPage on page 400.

Different levels of password policy can be set in AIWS, see Password policy on page 306.

Functionality matrix

The following matrix shows which functionality that can be used by the different authentication levels.

	anonymous	user	admin	sysadmin	auditor
Send messages	Yes	Yes	Yes	Yes	Yes
Phonebook administration	No	Yes	Yes	Yes	No
View configuration settings	No	No	Yes	Yes	Yes
AIWS configuration Access to the Setup Wizard and the Device Manager.	No	No	Yes	Yes	No
Change passwords	No	No	Yes **Note**: admin cannot set password for syadmin	Yes	No

Set passwords

It is possible to set passwords for the different users via the **Advanced Configuration** page.

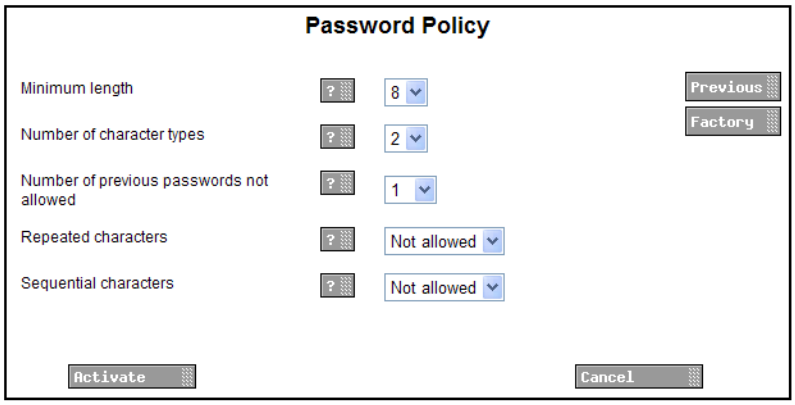
1. Click **Configuration** on the start page. The **Configuration** page appears.
2. Select Other **Settings > Advanced Configuration** in the left menu in the **AIWS Configuration** page. The **Advanced Configuration** page appears.
3. Under Security, click **Change Passwords**. The **Change Passwords** page appears.
4. Select user. The **Change password** page appears.
5. Change password. Click **Ch. Passwd**.

Password policy

The required password complexity can be set in AIWS, follow this instruction:

1. Login to AIWS.
2. Click on **Configuration**.
3. In the left pane, select **Other Settings** > **Advanced Configuration**.
4. Under Security, select **Password policy**. The **Password Policy** page opens

Figure 94: The Password Policy page



5. Select password policy.
6. Click **Activate**.

It is also possible to select previous or factory settings.

Web access security settings

When secure mode is enabled (recommended), only secure access via HTTPS and FTPES is allowed. HTTP is automatically redirected to HTTPS and FTP access is not allowed.

The web access security level can be set as follows:

1. Login to AIWS.
2. Click on **Configuration**.
3. In the left pane, select **Other Settings** > **Advanced Configuration**.
4. Under Security, select **Web access**. The *Web* **Access Security** page opens

Figure 95: The Web Access Security page

5. Select if *Secure Mode* shall be enabled or not.
6. Click on **Activate**

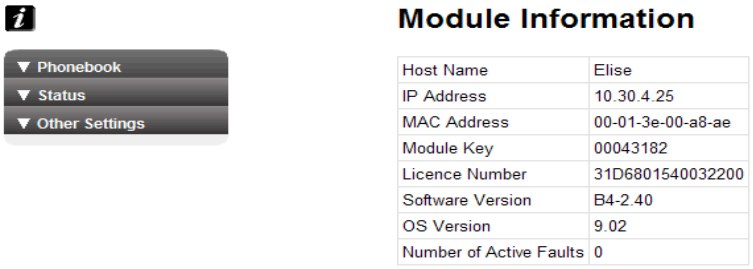
It is also possible to select previous or factory settings.

Configuration Page

Figure 96: AIWS Configuration from AIWS start page.

In order to reach the AIWS Configuration page, click on Configuration on the AIWS start page.

Figure 97: AIWS Configuration page.



With system administrator or administrator rights you will be able to access the complete AIWS configuration page from the *Configuration*, and *Phonebook* buttons on the start page.

On the *Configuration* page, system information is shown, for example:

- Host Name
- IP Address
- MAC Address
- Module Key
- Licence Number
- Software Version
- OS Version
- Number of Active Faults

Icons

On the AIWS pages the following icons might be shown:

Click on this icon to return to the *AIWS start page*.

Click on this icon to return to the *AIWS Configuration* top page.

Click on this icon to create a shortcut in your Internet Browser.

Certificates

Certificates are used to increase security by encryption. A self-signed digital certificate is created during the first start-up of AIWS. This certificate is issued to the MAC address of the module. Except for the certificate created during start-up, it is possible to import a certificate or to create one in the AIWS.

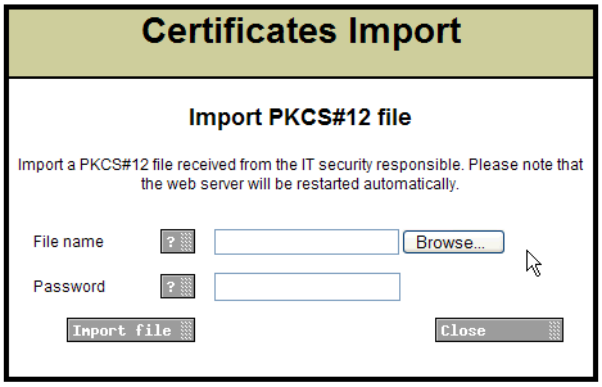
Import certificates

It is possible to import certificates to AIWS. These certificates may be created by a system administrator with IT security responsibility. AIWS uses PKCS#12 files, which include keys and certificates.

For instructions on how to import a PKCS#12 file, follow this instruction:

1. On the **AIWS start page**, click on **Configuration**. The **AIWS Configuration** page opens.
2. In the left pane, click **Other settings** > **Advanced configuration**. The **AIWS Advanced Configuration** page opens.
3. In the left pane, under **Certificates**, click on **Import**. The **Certificates Import** page opens.

Figure 98: The Certificates Import page.


Certificates Import
Import PKCS#12 file
Import a PKCS#12 file received from the IT security responsible. Please note that the web server will be restarted automatically.
File name
Browse...
Password
Import file
Close

4. On the **Certificates Import** page, you can locate a certificate file. Enter file name and a valid password. The certificate is tied to a specific password which should be delivered with the file.
5. Click **Import file**. The file is imported to AIWS.
6. Click **Close**.

You may have to ask the network administrator for PKCS#12 files.

When starting, there may be a warning about the security certificate. This warning can be ignored.

Create certificate

It is possible to create certificates in AIWS. For instructions on how to create a PKCS#12 file, follow this instruction:

1. On the **AIWS start page**, click on **Configuration**. The **AIWS Configuration** page opens.
2. In the left pane, click **Other settings** > **Advanced configuration**. The **AIWS Advanced Configuration** page opens.
3. In the left pane, under **Certificates**, click on **Create**. The **Create Self Signed Certificate** page opens.

Figure 99: The Create Self Signed Certificate page.

4. On the **Create Self Signed Certificate** page, enter valid parameters for your certificate file. **Validity** and **Common name** are mandatory.

   Due to security reasons, some characters in the ASCII-table are not allowed to use in the fields **Common Name**, **Organization Unit**, **Organization**, **Locality**, **State or Province** and **Country** when creating a certificate.
   Among these are: [,], (,), {, }, $, &, \, |, *, ", `, ', ?, ~, >, <, ^, \n, \r.

5. Click on **Create Certificate**. A certificate file is saved and the web server is restarted.

AIWS Setup Wizard and Configuration

Basic Configuration Steps

Figure 100: Setup Wizard button on AIWS start page

The first time and as long as the AIWS is not configured, the setup wizard will start automatically when logging on from a web browser. Requires "**admin**" or "**sysadmin**" password, refer to Authentication Levels and Default Passwords on page 305.

1. Log on to AIWS.

   The setup wizard will open and help you with the basic configuration. The setup wizard includes the following settings:

   - Network setup – can be set manually or via DHCP
   - Licence number – the type of licence determines the functionality
   - DECT IP address – IP address to the DECT exchange
   - Date and time properties/settings – for time stamps on activities
   - Central Phonebook properties – database to use when searching (internal, external or LDAP server)
   - LDAP properties (only visible if LDAP is selected in the Central Phonebook Properties)
   - TFTP properties – IP address and port number to use (only visible if TFTP is selected in the Central Phonebook Properties)
   - Passwords – change from default to site specific passwords

2. Configure the phonebook (but only if an LDAP server or TFTP is **not** used), refer to Central Phonebook Configuration on page 358.
3. Create a security backup.

   We recommend you to create a security backup of all settings (to facilitate the configuration in case of a software upgrade). Refer to Backup the Configuration on page 373.

Optional Settings

Some of the optional settings in AIWS are included in the basic licence, other require an additional optional licence. Refer to How to Use this Chapter on page 291.

- Set Language – it is possible to translate the user interface language, refer to chapter Customize the Language on page 387.
- Customize the Start page and NetPage GUI – the Start page and the NetPage user interface can be customized to suit the individual customer requirements concerning functionality. Refer to chapter Customize the User Interface (GUI) on page 391.
- Open Access Protocol (OAP) – makes it possible to communicate with other systems that is connected to the AIWS. Refer to chapter Open Access Protocol (OAP) on page 410.
- Digit Treatment – makes it possible to set the way telephone numbers are converted in telephone number lists. Refer to Digit Treatment in Central Phonebook on page 364.

Operation - Messaging

Creating and sending messages requires no password and can be done by any user in the system. Depending on AIWS bundle, different GUI's are displayed.

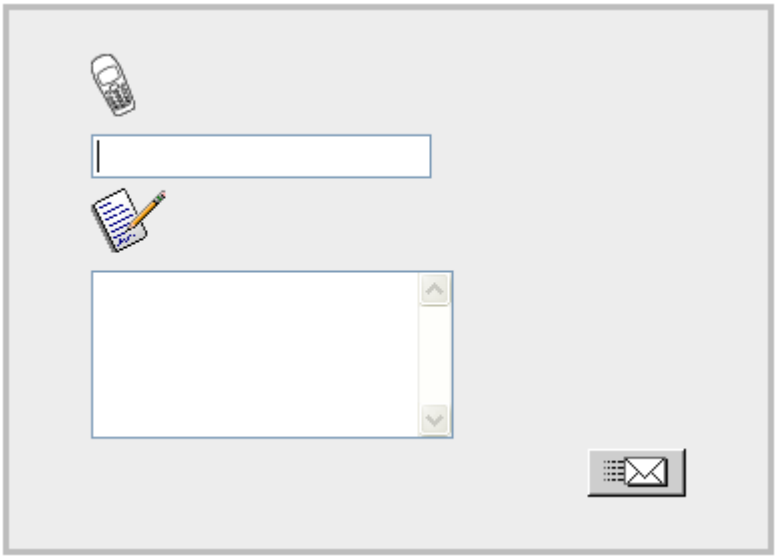
Figure 101: Messaging button on AIWS start page

For configuration of the Messaging Tool, see Operation - Messaging on page 314.

Messaging Tool

The Messaging Tool GUI is displayed on AIWSs without additional licence.

Figure 102: Messaging Tool GUI



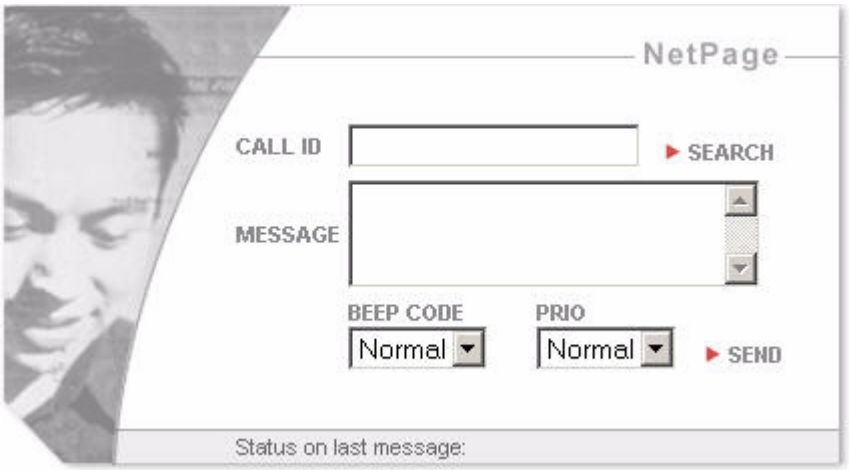
In order to send a message, do as follows:

1. On the AIWS start page, click on **Send Message**, the Messaging Tool window appears.
2. Enter phone number in the top text field.

3. Enter message in the bottom text field.
4. Click on the send button. The message is sent to the receiver.

NetPage

The NetPage messaging tool is shown for user with a licence including NetPage.



Create and send Messages

You can sent a message with priority **Normal**, **Low** and **High**. The higher the priority the faster the message will be delivered. An additional priority code Alarm can also be made available by customizing the netpage html files. Messages send with priority Alarm will be opened immediately independent from the active screen on the handset site (even if the handset is in a call).

In the combo box **Beep Code** you can select, how the message should be signalled on the called telephone.

Note:

Selecting **Beep Code *x beeps*** will only work, if on the called phone the setting **Sound & Alerts > Message alerts** is set to **Beep**.

1. Click **Send Message** on the start page. The **NetPage** opens.
2. Click either on the **Search** button to search a number from the Users list, or enter number in the **Call ID** field. It is possible to enter several Call ID's separated by semicolon.

Note:

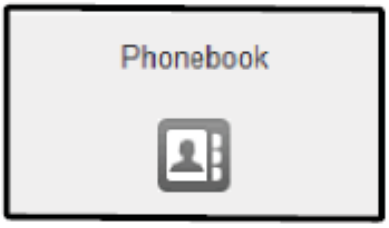
It is not possible searching for phonebook numbers. To import a number list used by the NetPage refer to NetPage Configuration on page 402.

3. Enter message text in the **Message** text field. All possible characters are shown in Characters for SMS on page 173.
4. Enter ***Beep code*** and ***Prio***.
5. Click **Send**.

Phonebook Administration

The phonebook administration in this chapter requires authentication on *user* level. For further configuration, see Central Phonebook Configuration on page 358.

Figure 103: Phonebook button on AIWS start page



The phonebook makes it possible for users to search and find phonebook entries from a telephone in the system.

If a local phonebook is used the entries must be added, either by creating them manually, refer to Add Entries to the Phonebook on page 316, or importing them from a CSV file, see Import Entries to the Phonebook from a CSV File on page 319.

Phonebook Editing

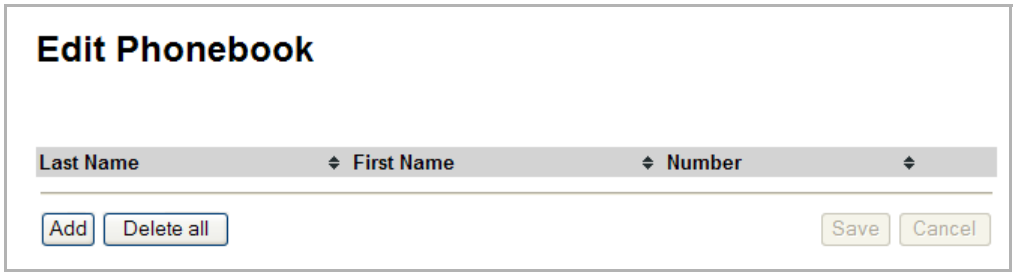
Add Entries to the Phonebook

The entries in the phonebook can be filled in manually.

1. Click **Phonebook** on the start page.
2. Enter ***User name*** and ***Password*** and click **OK**
3. Select **Phonebook > Edit** in the left menu.
4. Click **Add** button and enter the information needed in the text fields as described in Add Entry Manually below,

Add Entry Manually

Figure 104: The Edit Phonebook page



1. Enter the following settings in the text fields:

Setting	Description
Last Name:	The family name
First Name:	The first (given) name
Number:	The phone number

2. To add several rows click **Add** again.
3. Click **Save**.

Sorting of Phonebook

The entries in the phonebook can be sorted on Last Name, First Name or Number.

1. On the start page, click **Phonebook**.. The **Edit Phonebook** page appears.
2. Select **Phonebook > Edit** in the left menu.
3. To sort the entries, click on the arrows in the list's title bar.

The **Edit Phonebook** page can also be reached from the AIWS Configuration page, via **Other settings > Advanced Configuration**.

Delete a single entry

Entries in the phonebook can be deleted in the following way:

1. On the start page, click **Phonebook**.
2. Enter User name and Password and click **OK**.
3. In the left pane, click **Phonebook** and **Edit**. The **Edit Phonebook** page appears, see figure 104 on page 317.
4. In the Edit Phonebook page, locate the entry to be deleted. Click the ✕ button in the same row.

5. Click **Save**. The entry is deleted.

Delete All

All entries in the phonebook can be deleted by clicking the **Delete All** button.

1. On the start page, click **Phonebook**. The **Edit Phonebook** page appears.
2. In the left pane, click **Phonebook** and **Edit**. See figure 104 on page 317.
3. In the **Edit Phonebook** page, click **Delete All**. It is now possible to mark entries not to be deleted by clicking on the blue arrow, ( ). If the blue arrow icon is clicked, it disappears and a red is displayed.
4. Click **Save**. All entries marked with a blue arrow are deleted. The entries that are marked are kept.

Operation

The user accesses the phonebook by sending a message from the telephone. The message includes a search query containing part of the first name and/or the family name, or phone number, see below.

You want to search for:	Text to be entered:
First name or Family name	<Part of name>
First and Family name	<Part of first name><space><Part of family name>
First name only	<Part of first name><space>
Family name only	<space><Part of family name>
Telephone number	<Part of number>

Some telephones have separate fields for these entries and some don’t.

By part of name means the first characters of the name and by part of number means the last digits of the number. If no message text is entered the AIWS will return a failure.

1. Enter the text and send it to the phonebook with the specified address (number).

   The search result is sent back to the telephone as an message. If more than one number that matches the query is found, the result is displayed as a list of names.

   Note:

   A central phonebook search will only show the first 25 entries (if more matches available) in the cordless telephone. User needs to narrow down the search string to get not displayed entries.

2. Select a name and press the Call key to dial the number. See also the documentation for the telephone that is used.

Search examples

You want to search for:	Text to be entered:	Search result:
First name or Family name	S M	All names that start with *Sm*, both first names and family names.
First and Family name	L ␣ B	All entries where the first name starts with L and the family name starts with B.
First name only	A N ␣	All first names that starts with *An.*
Family name only	␣ A N	All family names that start with *An*.
Telephone number	2 0 0	All telephone numbers that end with 200.

Import and Export a Phonebook

Import Entries to the Phonebook from a CSV File

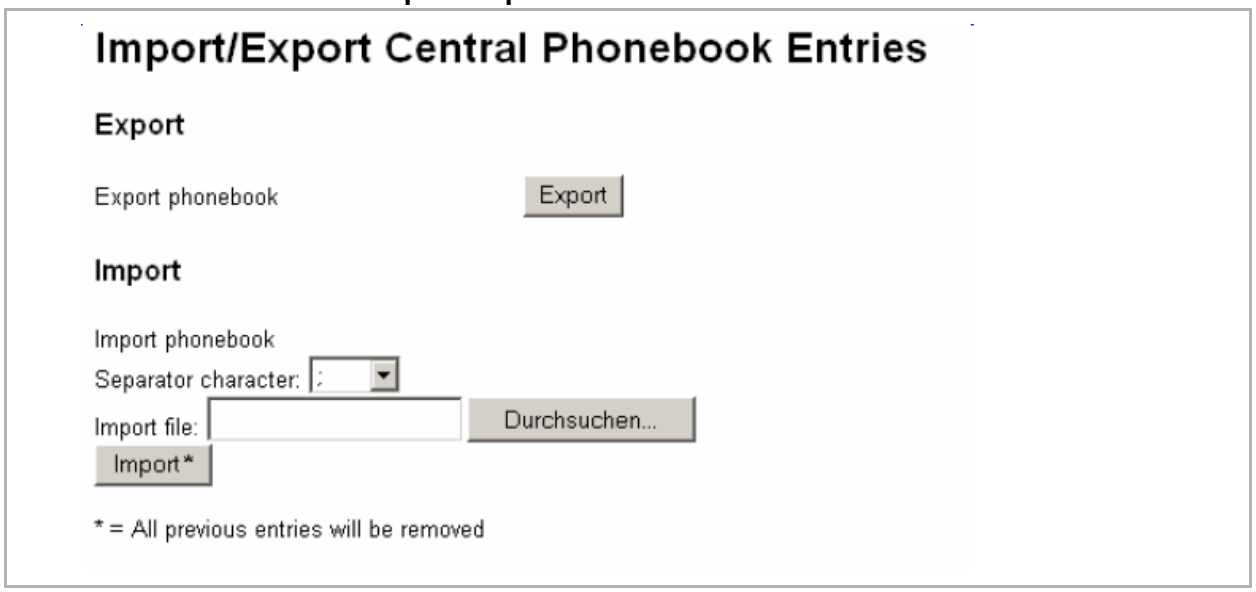
The CSV file to be imported to the phonebook should have the following format using a semicolon, a comma or a TAB as a delimiter, i.e.:

```
First name 1;Last name 1;Phone number 1
First name 2;Last name 2;Phone number 2
```

Warning: When importing a phonebook file in CSV format, existing entries are deleted.

1. Click **Phonebook** on the start page.
2. Enter ***User name*** and ***Password*** and click **OK**.

3. Select **Phonebook > Import/Export** in the left menu.



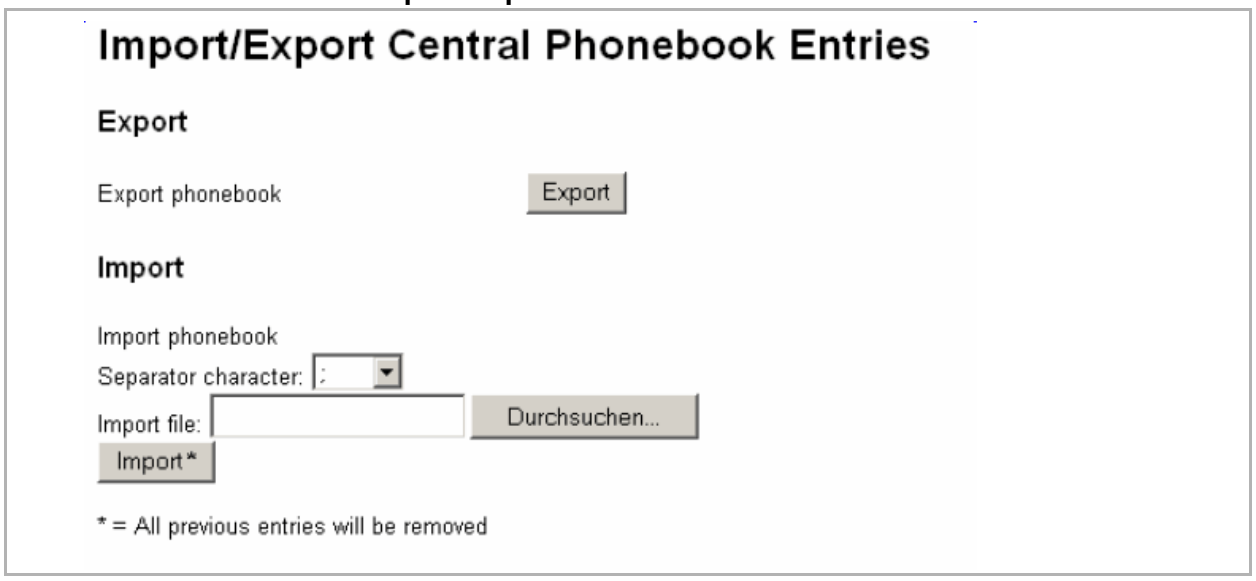
4. Click **Browse** to locate the CSV file in the system.
5. 5 select the delimiter (TAB, comma or semicolon) used in the CSV file.
6. Click **Import**.

Export the Phonebook to a CSV File

The complete phonebook can be exported to a CSV file for example for editing or backup reasons.

1. Click **Phonebook** on the start page.
2. Enter ***User name*** and ***Password*** and click **OK**.

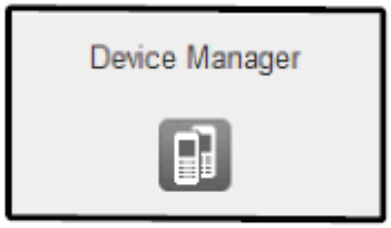
3. Select **Phonebook > Import/Export** in the left menu.



4. Click **Export**.
5. Click **Save** in the dialogue window that appears.
6. Enter a ***name*** of the file and select in which ***folder*** the file should be saved.
7. Click **Save**.

Device Manager

Figure 105: Device Manager button on AIWS start page



Device Management is the general term of managing devices. Centralized Management implies that devices are managed from a central application. The Centralized Management concept gives several advantages when administrating devices.

Centralized Management makes it possible to handle parameters and software for devices on-site on a central workstation or remotely.

The Device Manager can manage large sets of devices and contains a solution for:

- Centralized software upgrade on a set of devices
- Centralized configuration of devices
- Central database storage for all device settings
- No need to collect all devices when upgrading software or changing settings

This section gives a description of the Device Manager in AIWS and how it is intended to be used.

In the Device Manager much of the work is done with Devices, Numbers and Templates. A Device can be a telephone, a charger etc. A Number consists of the parameters belonging to a certain device. A Template can be used to set parameters that are common for several devices of a certain device type. The template can later be applied to a certain Number.

Important:
The AIWS server shall always be switched on.

Device Manager description

Device Manager terminology

This section gives a brief description of the core terminology in the Device Manager.

- Device; can be a charger or a portable device that can be connected to AIWS.

- Number; the complete settings for a single device. Also chargers have a Number.
- Template; general settings for a specific device type. A template can be applied to several Numbers of the same device type.
- Tabs; in the Device Manager there are three different views, or tabs. In these tabs, the information for devices, Numbers and templates are shown. Some information is shown in two tabs.
- Parameter definition file; a file including all possible settings for a certain device type. Templates are created from parameter definition files.
- Software; is the software used in devices. The device software can be updated via AIWS.
- Version; parameter definition files and device software are indicated by versions.
- Package file; a file that can contain other files, such as parameter definition files, software files and template files.
- Importing; diffent types of files can be imported. Note that if a software file should be imported, it may have been delivered in a package file.
- Associate; before being able to synchronize parameters between AIWS and devices, it is necessary to associate a Number with the device. Association includes all parameters. If it exists on that device type, it also includes Contacts.
- Assign; it is possible to assign a Number to a device that has not yet been assigned a Number in the Device Manager. Assign includes only the parameters defining the Number.

Device Manager usage

This section gives a short description to give a basic understanding on how to use the Device Manager with devices.

This description is intended to be used to get a basic understanding of the work flow and is not intended to be followed in work.

- Import a parameter definition file of the corresponding device type to AIWS.
- Create a template from the parameter definition file.
- Add a device to AIWS.
- Create a new Number for the corresponding device type.
- Associate the Number with the device.

Refer to the following chapters for a description.

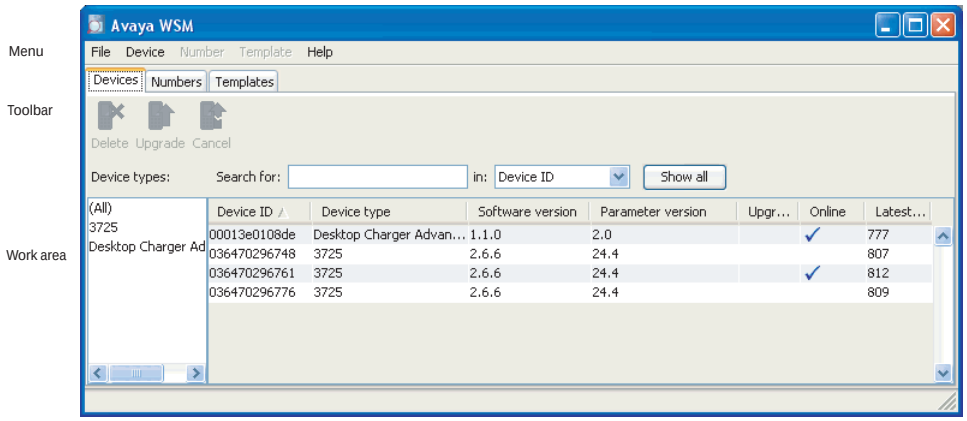
The Device Manager

AIWS is opened in a web browser by typing the IP address of AIWS in the address bar. Then click **Device Manager** to reach the Device Manager GUI.

The **Device Manager** window consists of three areas: **Menu**, **Toolbar** and **Work Area**. The Toolbar has three tabs: **Devices**, **Numbers** and **Templates**. When one of these tabs is selected the available devices types will be shown in the left hand pane of the work area. The right hand pane shows the devices, numbers or templates which have already been configured.

In the upper part of the Work area there are search fields where different search criteria can be selected depending on which tab that is displayed.

Figure 106: Device Manager window areas



Sort the List

By default the lists in **Devices**, **Numbers**, and **Templates** are sorted by Device ID, Number ID, and Name respectively. To sort the list by any other column, click on the appropriate column heading. To reverse the sort order, click on the column heading again. The sorting order is indicated by an up or down arrow in the column heading. Secondary sorting order can be done by pressing **Ctrl** and clicking on the column heading.

Filter the List

By default the list in each tab shows all available Devices, Numbers, or Templates. It is possible to filter the list by selecting the desired device type in the **Device types***:* column in the left pane.

Colour coding

General colour coding

This colour coding is valid for the lists under the tabs:

- If the version number is shown in red, the Device Manager has found no parameter definition files supporting that device type.
- If the version number is shown in dark red, the parameter definition file is compatible, but does not have exactly the same version as the device.

Colour coding for parameter and template editing

In the parameter and template editing windows, the following colour coding is used:

Colour	Context	Description
Black	General	Normal
Dark blue	For templates and parameter editing	Parameter has been edited during the current session
Purple	For templates	The parameter is included in the template (checked)
Red	For templates and parameter editing	Value not valid
Turqoise	For templates and parameter editing	The value differs from the default value

Navigation

For keyboard shortcuts, see Device Manager Keyboard Shortcuts on page 415.

Tabs

The information in AIWS is shown in different views, or tabs:

- Devices tab
- Numbers tab
- Templates tab

In each of these tabs, specific information is shown in lists about devices, Numbers, or templates. Some of the information overlaps, for example Device ID, which is tied to both a specific device and to a specific Number.

The operations that can be done in the Device Manager are done from these tabs and from the menu. Different menues are accessible in the diffferent tabs.

Devices Tab

Select the **Devices** tab. The view shows all devices configured at the site in a detailed list. The following columns are displayed on each row:

- *Device ID* – the unique identifier of the device
- *Device type* – the device model
- *Software version* – shows the version of the software in the device
- *Parameter version* – shows the version of the parameters in the device

- *Upgrade status* – show one of the following icons

  software upgrade in progress.

  It is also possible to see a progress bar when the device is being upgraded.

  software upgrade Pending, Request sent, or Accepted (a green arrow).

  software upgrade Scheduled or Retrying.

  - the last upgrade Failed or Aborted (a red broken arrow).
  - device busy, operation cannot be executed because handset is not in idle state. Please bring handset back to idle state to start the operation. Sometimes a restart of the PDM application is needed to get the proper status update for this handset.

  "Completed", no icon is shown

Note:

A software upgrade from AIWS should be done on one device to start with. If successful, the remaining devices can be updated in one operation.

- *Online* – shows if the device is connected to the Device Manager. The ✓ icon indicates a connected device.
- *Latest Number* - shows the Number ID that the device had during its last login.

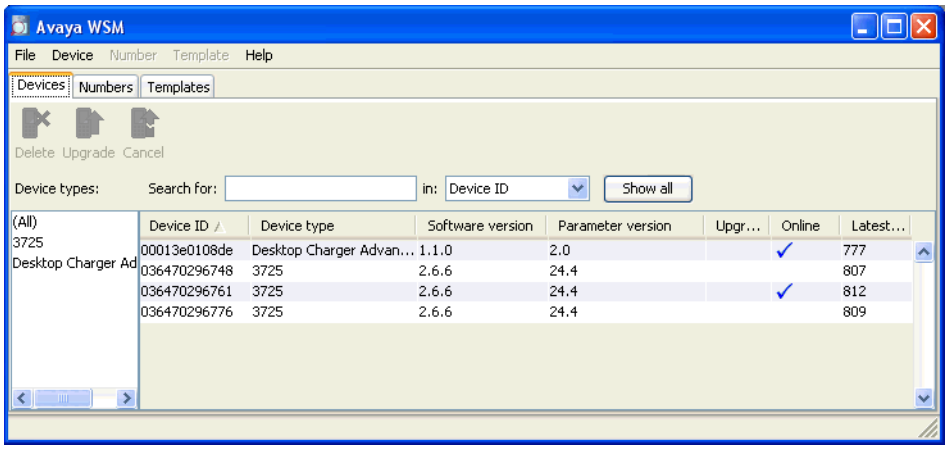
Note:

A handset can be online when connected over the air or plugged into an advanced charger.

Advanced Chargers and Rackmount Chargers will be online when connected to the Ethernet

There is a certain time out of a view hours, so it's not mandatory that the device is still online.

Figure 107: The Devices tab showing a list of devices in a system

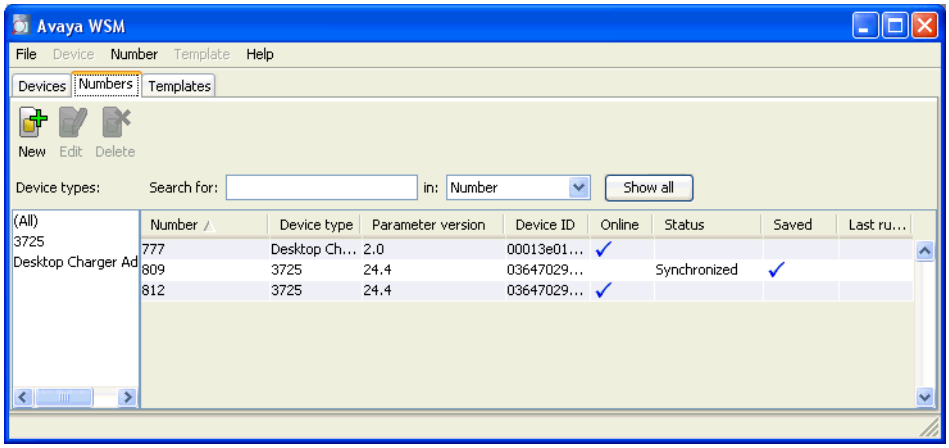

Avaya WSM
File Device Number Template Help
Devices Numbers Templates
Delete Upgrade Cancel
Device types: Search for: in: Device ID Show all
(All)
3725
Desktop Charger Ad
Device ID Device type Software version Parameter version Upgr... Online Latest...
00013e0108de Desktop Charger Advan... 1.1.0 2.0 777
036470296748 3725 2.6.6 24.4 807
036470296761 3725 2.6.6 24.4 812
036470296776 3725 2.6.6 24.4 809

Numbers Tab

Select the **Numbers** tab. The view shows all Numbers configured at the site in a detailed list. The following columns are displayed on each row:

- *Number* – the unique identifier of the Number. The identifier is unique for that device type.
- *Device type* – the device model the Number is intended for
- *Parameter version* – shows the version of the parameters in the Number
- *Device ID* – the unique identifier of the device that the Number is associated to
- *Online* – shows if the device the Number is associated to is online. The ✓ icon indicates an online device
- *Status* – shows the parameter synchronization status. A Number can also be queued for synchronization. Several different indications are used, for example Synchronizing, Sync queued, Save queued, Synchronized, etc.
  When the Number is offline, the database status is shown; Synchronized or Not synched.
- *Saved* – shows if the Number's parameters have been stored in the database. The ✓ icon indicates that the parameters have been stored.
- *Last run template* - indicates which template that was last run for that Number

Figure 108: The Numbers tab showing a list of Numbers in a system

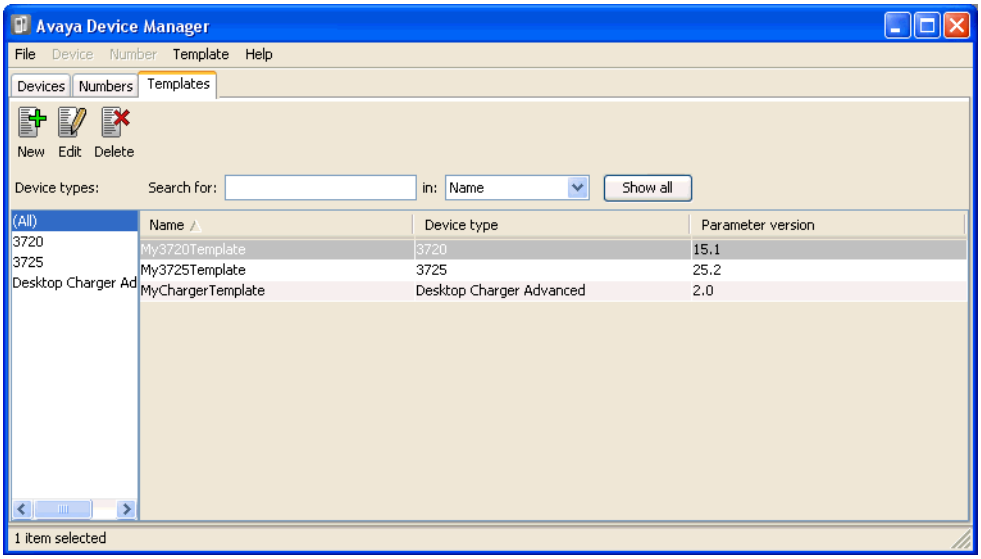


Templates Tab

Select the **Templates** tab. The view shows all templates in a detailed list. The following columns are displayed on each row:

- *Name* – the name of the template
- *Device type* – the device model the template is intended for
- *Parameter Version* – shows the parameter version

Figure 109: The Templates tab in the Device Manager



Log In

Note:

When an attempt is made to start AIWS Device Manager, a popup window is displayed with a warning that the program's digital signature that cannot be verified. The text is displayed in the language used in the computer's operating system. Click **Run** (or the equivalent term in the operating system language).

Note:

Three clients can be logged in at the same time, but to avoid conflicts make sure that only one at a time is updating Numbers.

1. Start a Web Browser. Type the IP address for AIWS.
2. Click on **Device Manager**.
3. Select User ID and enter password, see Authentication Levels and Default Passwords on page 305.
4. Click **OK**. The Device Manager starts.

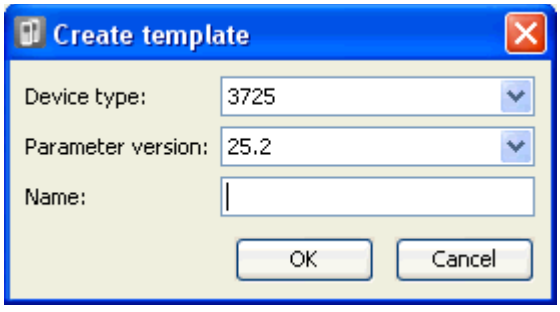
Templates in Device Manager

Create a Parameter Template

It is usually desirable to create a customized parameter template that can be applied to all devices of a certain device type.

1. Select the **Templates** tab.
2. In the **Template** menu, click **New**. The **Create Template** dialogue appears.

Figure 110: Create Template dialogue

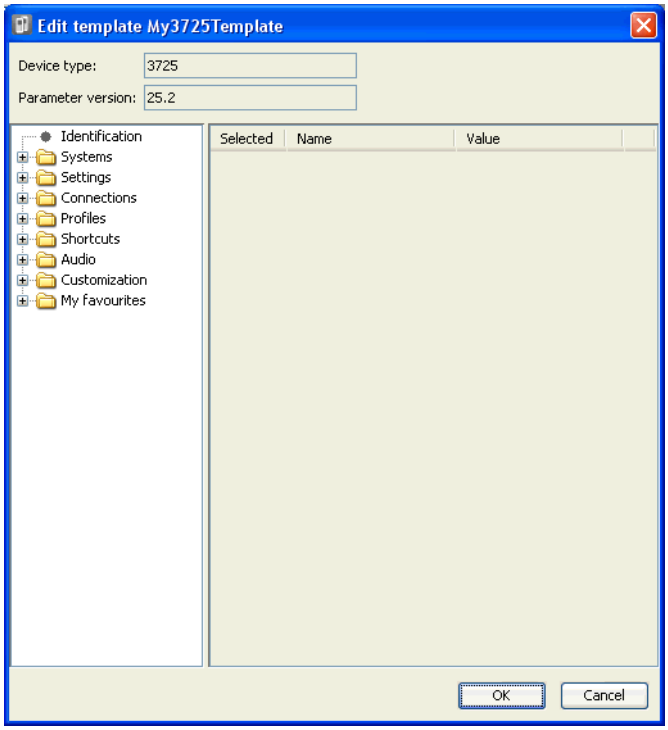


3. Select ***device type*** and ***parameter version***, type in a ***name*** for the template, and click **OK**. The view switches to the **Edit Template** parameter view.

Note:

If you cannot find your device type and/or parameter version in the list, the Device Manager needs to be updated with new parameter definition files, see Import Parameter Definition Files on page 343

Figure 111: Edit Template parameter view



4. Select the parameters you want to be saved in the template by selecting the checkbox to the left of each parameter.
5. Change the parameters to the desired values.
6. Click **OK**.

Create a Parameter Template from a Number

It is also possible to create a template from a Number in the Device Manager.

1. Select the **Numbers** tab.
2. Mark the ***Number*** you want to use.
3. Right click on the ***Number*** and select **Use as template...**
   The **Enter template name** dialogue opens.
4. Enter a ***name*** for the template.
5. Click **OK**.

6. The **Edit template** dialogue opens. Continue with 4 to 6 in Create a Parameter Template on page 329.

Note:

When the **Edit template** window is opened from the **Use as template** command, an extra drop-down list, **Select** is shown in the bottom left corner. This setting decides which parameters that shall be copied from the Number. If **All parameters** is selected, the synchronization time will be longer.

It is also possible to create a template from a portable that is online but not stored in the database. The template will contain all parameters for the device except for those that are Number specific.

Rename a template

1. Select the **Templates** tab.
2. Select the template you want to rename. The selected row is highlighted.
3. In the **Template** menu, select **Rename...** or right click and select **Rename...**. The **Rename template** dialogue opens.
4. In the **Rename template** dialogue, enter a new name in the **New name** text field.
5. Click **OK**. The **Rename template** dialogue closes and the new name appears in the list in the **Templates** tab.

Copy a template

1. Select the **Templates** tab.
2. Select the template you want to copy. The selected row is highlighted.
3. In the **Template** menu, select **Copy...** or right click and select **Copy...**. The **Copy template** dialogue opens.
4. In the **Copy template** dialogue, enter a new name in the **New name** text field.
5. Click **OK**. The **Copy template** dialogue closes and the new template appears in the list in the **Templates** tab.

Edit a template

1. Select the **Templates** tab.
2. Select the template you want to edit. The selected row is highlighted.
3. In the **Template** menu, select **Edit...** or right click and select **Edit...**. The **Edit template** window opens.
4. In the **Edit template** window, edit the parameters that shall be edited.
5. Click **OK**. The **Edit template** window closes.

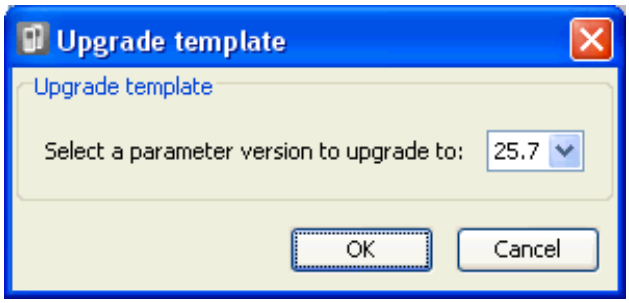
Delete a template

1. Select the **Templates** tab.
2. Select the template you want to delete. The selected row is highlighted.
3. In the **Template** menu, select **Delete**, or right click and select **Delete**, or press the Delete button. The **Delete template** dialogue opens.
4. Click **Yes**. The **Delete template** dialogue closes and the template is deleted.

Upgrade a template

1. Select the **Templates** tab.
2. Select the template you want to upgrade. The selected row is highlighted.
3. In the **Template** menu, select **Upgrade...** or right-click and select **Upgrade...**. The **Upgrade template** dialogue appears.

Figure 112: The Upgrade template dialogue.

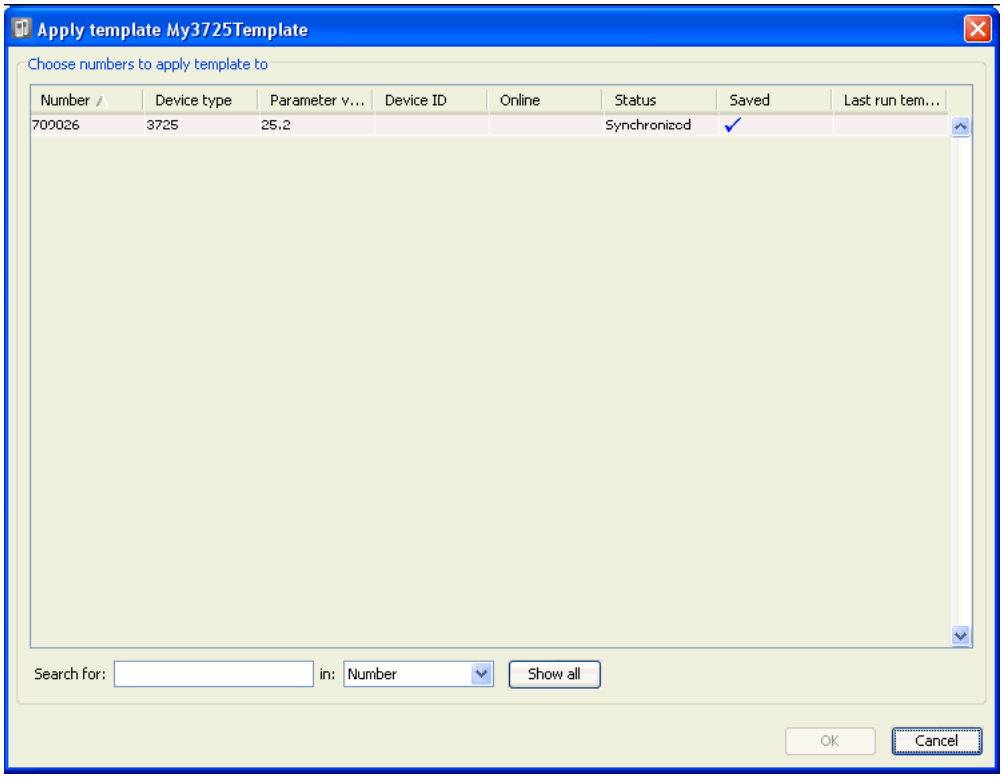


4. Select the parameter version to upgrade to.
5. Click **OK**. The template is upgraded and the dialogue closes.

Apply a template

1. Select the **Templates** tab.
2. Select the template you want to use. The selected row is highlighted.
3. In the **Template** menu, select **Apply to...** or right-click and select **Apply to...**. The **Apply template** window appears.

Figure 113: The Apply template window.



4. If needed, select search parameters or click **Show all**.
5. Select Number(s) to apply the template on.
6. Click **OK** .The template is applied and the window closes.

Numbers

Create New Numbers

1. Select the **Numbers** tab.
2. From the Number menu, click **New...**. Alternatively, right-click in the **Numbers** list and select **New...**. The **New Numbers** dialogue opens.
3. Select device type in the **Device type** list.
4. Select the parameter version in the **Parameter version** list. All parameters except Number specific parameters will be set to their default values.
5. Select which template to run on the Number. This is optional at this stage and therefore **None** can be selected.

6. If you want to create a single Number, select the **Single** option and enter the call number in the **Call number** text box. It is recommended to use the telephone extension of the handset as the number in the AIWS.

   Note:
   The prefix is not used in an Avaya system.

7. If you want to add a range of Numbers, select the **Range** option. Enter the start call number in the **Start call no.** text box, and the end call number in the **End call no.** text box.

   Note: The maximum range that can be added at a time, is 100 Numbers.

8. Click **OK**. The dialogue closes and the new Numbers show up the list in the Numbers view.

Parameter Transfer between a Device and the Device Manager

When a device is connected, it is synchronized with the associated Number in the Device Manager, see Synchronize a Device on page 339.

Note:
When parameters have been edited and the device is synchronized, only the edited parameters will be sent to the device.

Edit Parameters

The **Edit Parameters popup** window shows the set of parameters relevant to the Number that is being edited. The parameter groups are organized in a tree structure in the left pane, with the parameters in the current node in the right pane. The parameter list has one column with the parameter name, and another column gives the parameter value. This can be for example a numerical value, a boolean value, or text. Clicking in the column will give a short description of the selected parameter.

1. Select the **Numbers** tab. The **Number** view appears.
2. Select the Number. The selected row is highlighted.
3. Click **Edit** in the **Number** menu. Alternatively, right-click and choose **Edit**, or double-click on the Number.

   The **Edit Parameters for <Number>** window opens, where <Number> is the ID of the current Number.

4. Select parameter in the left pane.
5. Make your changes on the **Value** row.

   When a parameter has been edited, the name of the node to which the parameter belongs changes to a blue colour.

   (Click **Cancel** if you want to undo all parameters edited since your last save and return to the main window.)

6. Click **OK** to save your changes.

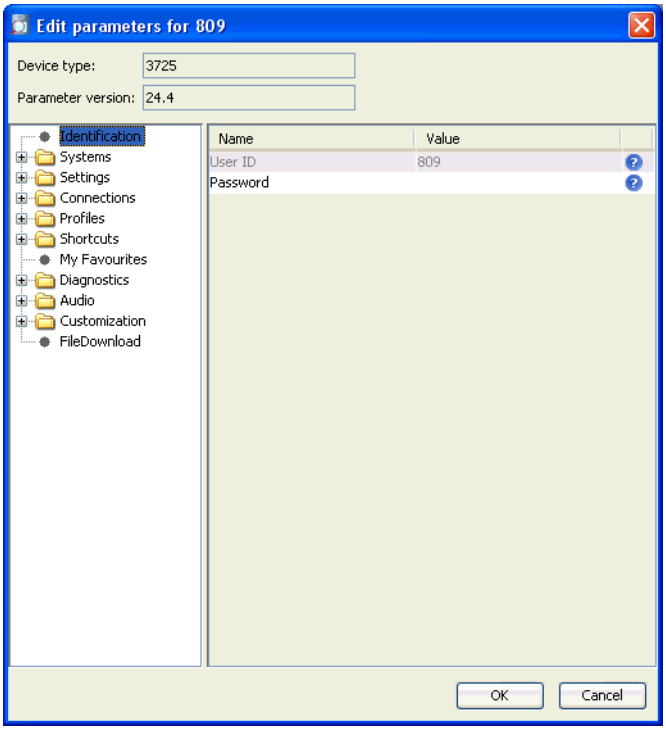
Note:

If the Handset is used on an Integral system only the sound and alert settings for:

- - Vibrating alert: on, off
- - key sound: click, tone, silent
- - ring type: normal short silent

will be valid. Other settings are ignored. This is also valid when configuring profiles.

Figure 114: Editing parameters in AIWS GUI



Note:

When you save the parameters, they are automatically sent to the device if it is online.

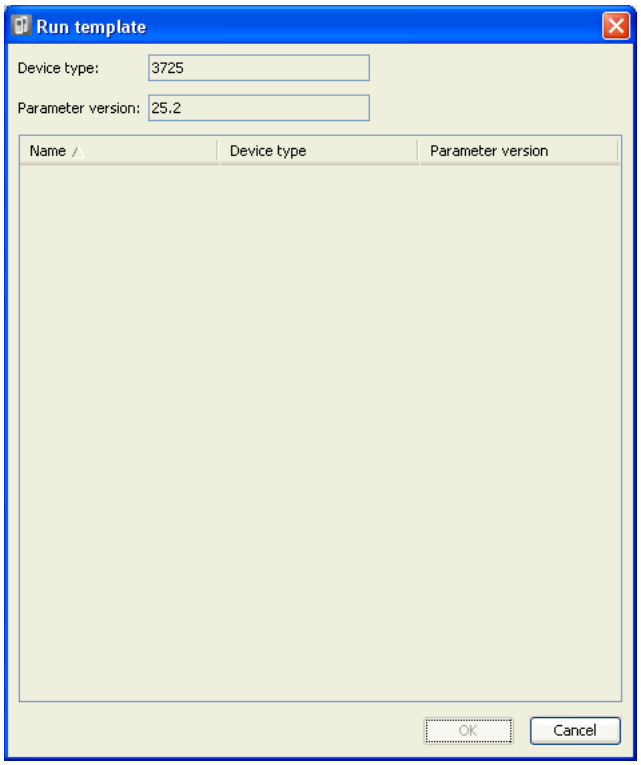
Run a Template to Set Parameter Values

If a template has been created for a device type, it can be used to set the parameter values for a range of devices, or a single device. The command to use is Run template.

1. Select the **Numbers** tab. The **Number** view opens.
2. Select the Number(s) you wish to run the template on.

3. In the Number menu, click **Run template...**. Alternatively, right-click on the Number in the **Number** list and select **Run template...** from the menu that appears. The **Run template** window appears.

Figure 115: Selected template to run on one or several Numbers



4. Select a template from the **Template** list.

Note:
If multiple templates are selected only one of them will be executed.

5. Click **OK**.

If the parameters in the database have been edited but not yet sent to the device it is indicated with **Not synched** or **Updated queued**.

If the Number has not been associated with a device, it is now possible to do so. Connect a device and associate it with a Number in the database. The parameters will automatically be sent from the Device Manager to the device. See Associate a Number with a Device on page 337.

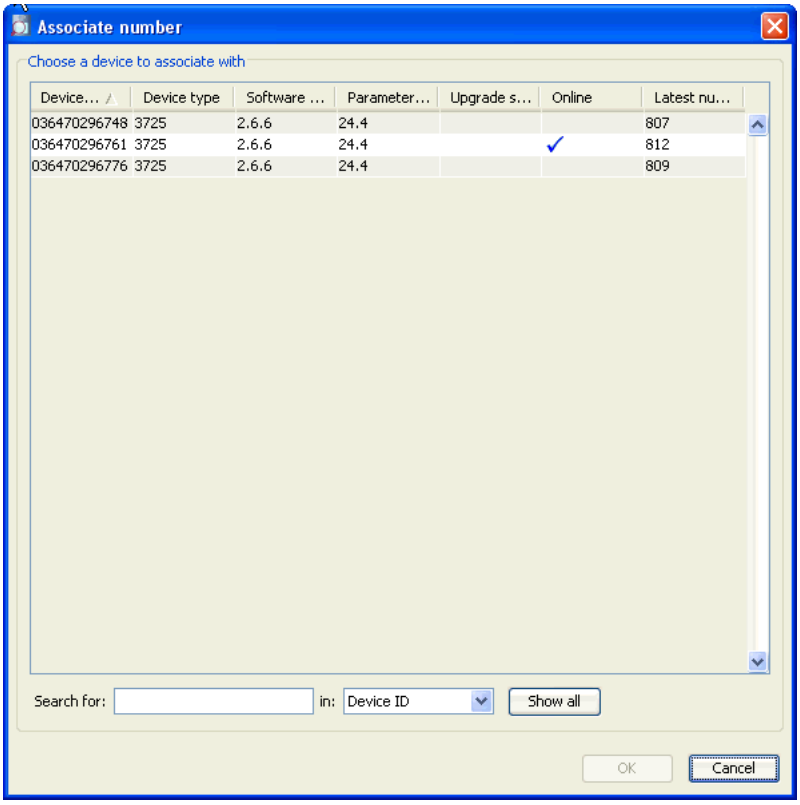
Associate a Number with a Device

Before being able to synchronize parameters between AIWS and devices, it is necessary to associate a Number with the device. It is possible to enter several Device ID's in advance and to associate them with a Number at a later moment.

See also Assign a Number to a device on page 341 and Create new Device on page 340.

1. Select the **Numbers** tab.
2. In the **Number** menu, select **Associate with device...**. The **Associate Number** dialogue opens.

Figure 116: Associate number dialogue



3. Select the device you want to associate with in the list and click **OK**.
4. Click **OK**.

If the selected device is online, it will immediately be updated with the selected Number. If the selected device is not online, it will be updated the next time it is online.

It is possible to associate several Numbers with several devices simultaneously.

Delete a Number in the Site Database

1. Select the **Numbers** tab.
2. Select the Number you want to delete. The selected row is highlighted.
3. In the **Number** menu, select **Delete** or right click and select **Delete**.
4. Click **Yes** in the **Delete Number** dialogue.

The dialogue closes and the Number is deleted from the list.

Rename a Number

1. Select the **Numbers** tab.
2. Select the Number you want to rename. The selected row is highlighted.
3. In the **Number** menu, select **Rename...** or right click and select **Rename...**. The **Rename number** dialogue opens.
4. In the **Rename number** dialogue, enter a new Number in the **New number** text field.
5. Click **OK**. The **Rename number** dialogue closes and the new Number appears in the list in the **Numbers** tab.

Copy a Number

1. Select the **Numbers** tab.
2. Select the Number you want to copy. The selected row is highlighted.
3. In the **Number** menu, select **Copy...** or right click and select **Copy...**. The **Copy Number** dialogue opens.
4. In the **Copy number** dialogue, enter a new Number in the **New number** text field.
5. Click **OK**. The **Copy number** dialogue closes and the new Number appears in the list in the **Numbers** tab.

Devices

A device can be a DECT telephone, a Rackmount Charger or an Advanced Charger developed to work together with the Device Manager. See the user manual for respective portable.

All work with devices is performed from the **Devices** view.

- Devices can be added by connecting the device to the system. or use the **Add device** function.
- It is possible to transfer the information for a Number from one device to a new device.

- Devices can be reset to factory settings.
- Devices can be updated with new software.

Add Devices

Note:

Before connecting a device to the Device Manager, make sure the connection is set up according to the instructions in the device´s *User Manual*.

If a range of new devices are to be added, the easiest way is to:

1. Create a template with all common parameter settings. See Create a Parameter Template on page 329.
2. Add a range of Numbers and run the template. See Create New Numbers on page 333 and *Run a Template to Set Parameter Values*.
3. Edit the parameters and change individual settings. See Edit Parameters on page 334.
4. Connect the devices and associate them with the Numbers in the database. See Associate a Number with a Device on page 337.

A single device can be added in the same way.

Note:

It is not possible to change model of a device already added to the site. Instead, a new device of the desired model must be added to the site and the parameters set to the correct values.

Synchronize a Device

When parameters have been changed in a device, the device is synchronized with the Number saved in the database. When a device is being synchronized, parameters that have been changed in the device are uploaded to the Device Manager, and parameters that have been changed in the Device Manager are sent to the device. If a parameter has been changed in both the device and the Device Manager, the setting made in the Device Manager will take precedence.

1. When a device is connected to the system running the Device Manager, and if the Number is saved, and it has a parameter definition, the device is automatically synchronized.

   While synchronizing, a progress bar and a text is shown in the Numbers view.

Note:

Due to hardware limitations in the 3720 telephone the device might be busy for parameter synchronisation, e.g. during a call.

Delete a Device

1. Select the **Devices** tab.
2. Select the device you want to delete. The selected row is highlighted.
3. In the Devices menu, select **Delete** or right click and select **Delete**.
4. Click **Yes** in the **Delete Device** dialogue.

The dialogue closes and the device is deleted from the list.

Note:
You cannot delete a device that is online.

Replace a Device

If a device shall be replaced with a new device, it is possible to transfer its associated Number including settings to a new device. The new device must be of the same device type as the old one.

1. If the device to be replaced is still working, make sure that it is synchronized.
2. Shut off the old device or make a factory reset.
3. Connect the new device to the Device Manager.
4. Associate the new device to the Number associated to the old device according to the instructions in Associate a Number with a Device on page 337. The Number will no longer be associated with the old device.

Note:
The subscription data will not be copied by this mechanism, so a handset needs to be subscribed to the IP-DECT system additionally.

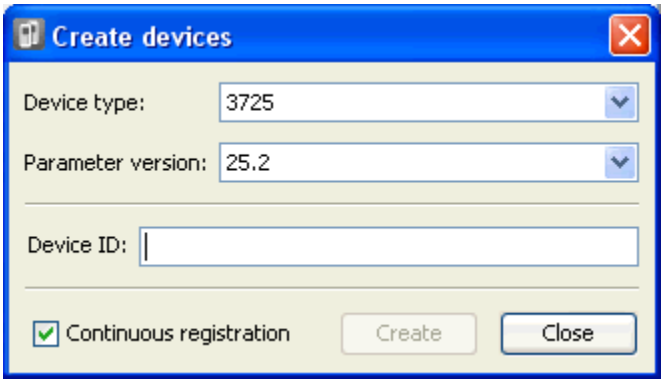
Create new Device

It is possible to enter several new Device ID's in advance into Device Manager for later association.

In order to simplify input when handling many devices, it is possible to use a bar code reader. The bar code reader should send a carriage return after each item, but it is not necessary. If carriage return is not sent, it is necessary to click **Create** after each read item.

1. Select the **Devices** tab.
2. In the **Device** menu, select **Add device**. The **Create devices** dialogue opens.

Figure 117: The Create devices dialogue



3. Select device type and parameter version.
4. Enter a Device ID for the device, manually or by using a bar code reader.
5. The **Continuous registration** box can be used to select whether the **Create devices** dialogue shall close after clicking **Create** or if it shall still be open.
6. If the bar code reader does not send carriage return, click **Create**.
7. Repeat 4 to 6 if more devices are to be created, otherwise click **Close**.

Assign a Number to a device

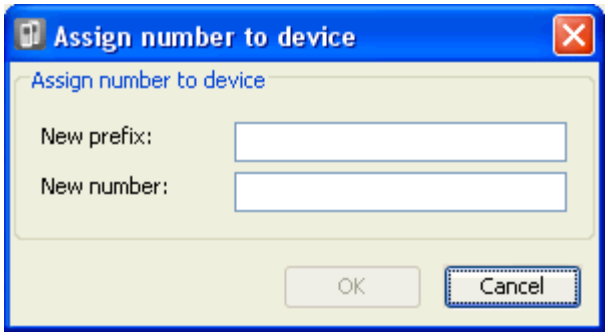
It is possible to assign a Number to a device that has not yet been assigned a Number in AIWS. This feature can be used if parameters have been changed on the device prior to connection to AIWS.

Assign a Number to a device shall not be done on a device that already has a number.

1. Select the **Devices** tab.
2. Select the device you want to assign a Number for.
3. In the **Devices** menu, select **Assign number**. The **Assign number to device** dialogue opens.
4. Enter a new number in the **New number** field. Click **OK**.

Note:
The prefix is not used in Avaya systems.

Figure 118: The Assign number to device dialogue



5. The new Number appears in the list in the **Numbers** tab.

Note:
Some devices need to be restarted for the new numbers to be shown.

Factory Reset

Factory reset means that the device parameters will be reset to factory settings. The Number in the database that is associated with the device will not be affected.

Note:
The device must be online.

1. Select the **Devices** tab.
2. Select the device(s) to be reset.
3. Click **Factory reset** in the **Device** menu. Alternatively, right-click on the device and select **Factory reset**.
4. A message saying **Do you want to reset the selected device(s) to factory defaults?** will appear.
5. Click **Yes**.

File management

This chapters covers the File management for parameter definition files, software files, language files and phonebook file. Import and export of templates and numbers is described in Import and Export on page 352.

Import of translation files is described in Import Translation files on page 390.

The parameter definition file holds the definitions of all parameters for a specific version of a Number's parameter set. Updated software and new parameter definition files for devices and Numbers can be added to the Device Manager, see Import Parameter Definition Files on page 343 and Import new Software for Devices on page 345.

If there is a naming conflict when importing, a warning message is displayed.

Definition File Version – Parameter Version

Both definition files and device software include parameters and are indicated by a version number.

Note:

The version of the definition file matches the version of the device software.

If a device is updated with a new parameter version it does not always demand a new definition file. An old definition file can often be used but if new parameters have been added in the new parameter version, these parameters will not be editable. The release note will tell you if a new definition file is needed to match the new parameters.

There are different parameter versions for different device types.

Example

If a parameter version for a Number is 2.5, then a parameter definition file with a version between 2.0 and 2.5 is required.

Import new Packages

Updated package files including new software and parameter definition files are distributed by your supplier. A package file can also contain template files. To import a package file please follow the steps to import parameter definition files (see below) or Import new Software for Devices on page 345.

Note:

Parameter definition files (.def) and software files (.bin) may be included in package files (.pkg) or delivered as separate files.

Import Parameter Definition Files

Updated parameter definition files are distributed by your supplier.

Note:

Parameter definition files (.def) may be included in package files (.pkg).

1. In the File menu, click **File management**. The **File management** window opens.
2. Select the **Parameter definition** tab.
3. Click **Add...**. The **Import files** dialogue opens.

4. Select the definition files to be imported.

   Only files with a corresponding extension are shown, such as .def and .pkg.

5. Click **Open**.
6. Check that the newly imported definition files appear in the list.
7. Click **Close**.

If a definition file for a certain device type already exists in the database and an attempt is made to import a definition file with the same parameter version and with a *lower* revision, the file will not be imported.

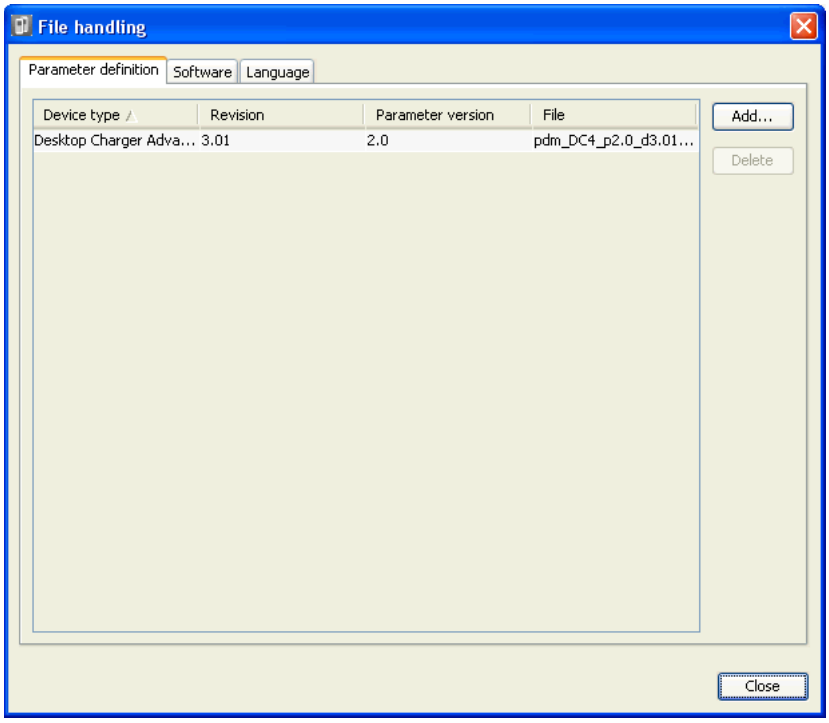
If a definition file for a certain device type already exists in the database and a new definition file with the same parameter version and with a *higher* revision is imported, the old file will be replaced with the imported file.

For each update of a parameter definition file, the revision is increased. An update does not necessarily affect the parameter version.

The following columns are displayed:

- *Device type* – the device model.
- *Revision* – the revision number of the definition file. Used to determine which definition file is the most recent.
- *Parameter version* – shows the version of the parameters in the definition file. Used to determine compatibility with device software.
- *File* – the name of the imported definition file

Figure 119: File management window, Parameter definitions tab



Import new Software for Devices

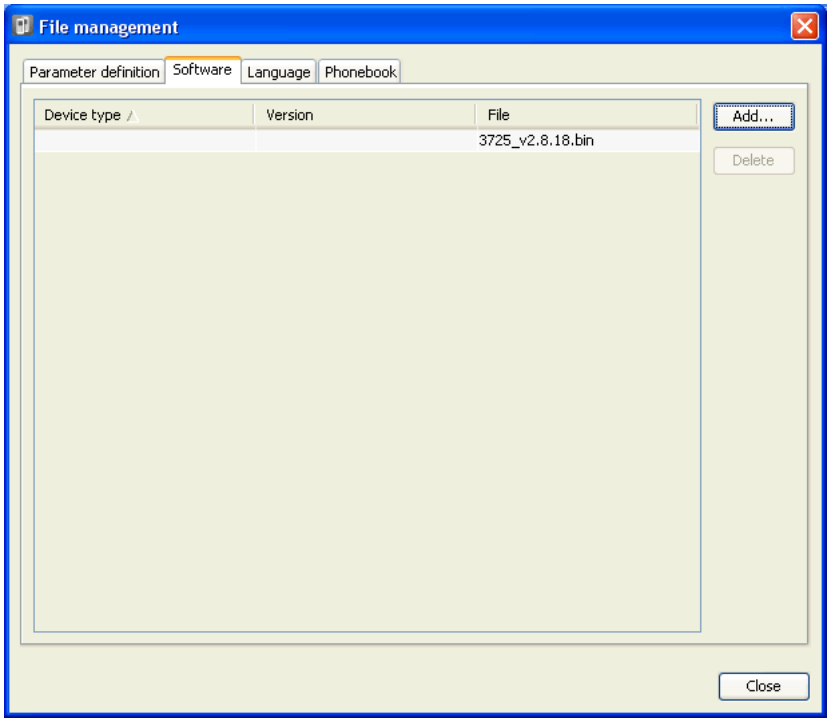
Updated software files are distributed by your supplier.

Note:
Software files (.bin) may be included in package files (.pkg).

1. In the **File** menu, click **File management**. The **File management** window appears.
2. Click on the **Software** tab.
3. Click **Add**. The **Import files** dialogue opens.
4. Select the software files to be imported.

   Only files with a corresponding extension are shown, such as .bin and .pkg.
5. Click **Open**.
6. Check that the newly imported software files appear in the list.
7. Click **Close**.

Figure 120: File management window, Software tab



Import Language files

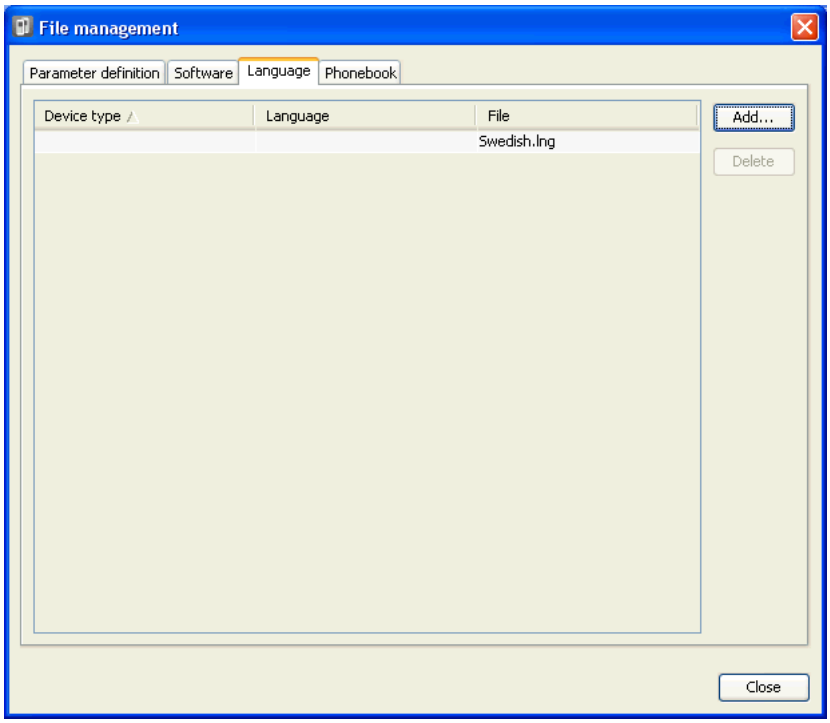
Note:

There is a difference between *Language files* (.lng) for devices described in this section and *Translation files* (.xml) for the AIWS interface that are described in Customize the Language on page 387. Import of translation files are done via the **AIWS Configuration** page.

Updated language files are distributed by your supplier.

1. In the **File** menu, click **File management**. The **File management** window appears.
2. Click on the **Language** tab.
3. Click **Add**. The **Import files** dialogue opens.
4. Select the language files to be imported.
5. Click **Open**.
6. Check that the newly imported language files appear in the list.

7. Click **Close**.

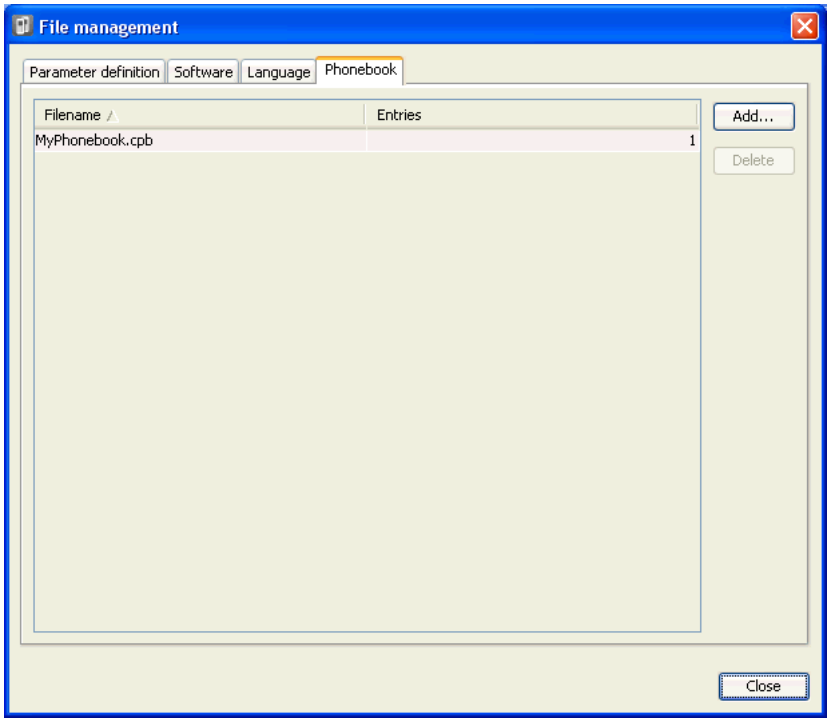


Import Phonebook files

It is possible to import a phonebook file for later use (see Company Phonebook on page 159).

1. In the **File** menu, click **File management**. The **File management** window opens.
2. Click on the **Phonebook** tab.
3. Click **Add**. The **Import files** dialogue opens.
4. Select the phonebook files to be imported.
5. Click **Open**.
6. Check that the newly imported phonebook files appear in the list.
7. Click **Close**.

Figure 121: File management window, Phonebook tab



Upload a Language

It is possible to upload a language to portable devices that support Language Upload.

Upload of languages is not available in unlicensed mode.

This feature requires a licence valid for file upload.

1. Select the **Devices** tab.
2. Select the device(s) to upload a language to. It is possible to select several devices, but only devices of the same Device Type can be selected.
3. In the Device Menu, select **Upload Language...**. The **Upload Language** dialogue opens.
4. Select which language to upload.
5. Click **OK**. The language is uploaded to the device.

Upload Phonebook

It is possible to upload a phonebook to portable devices that support this feature.

Upload of Company Phonebook is not available in unlicensed mode.

This feature requires a licence valid for file upload.

1. Select the **Devices** tab.
2. Select the device(s) to upload a company phonebook to. It is possible to select several devices, but only devices of the same Device Type can be selected.
3. In the Device Menu, select **Upload Company Phonebook...**. The **Upload Phonebook** dialogue opens.
4. Select which phonebook to upload.
5. Click **OK**. The phonebook is uploaded to the device.

Upgrade a Device with new Software

It is possible to upgrade the software in a device.

Upgrade of device software is not available in unlicensed mode.

This feature requires a licence valid for file upload.

1. Connect a device to the system.
2. Select the **Devices** tab.
3. Select from the list the device(s) that are to be upgraded. The selected row is highlighted. It is possible to select several devices, but only devices of the same Device Type can be selected.

   Note:

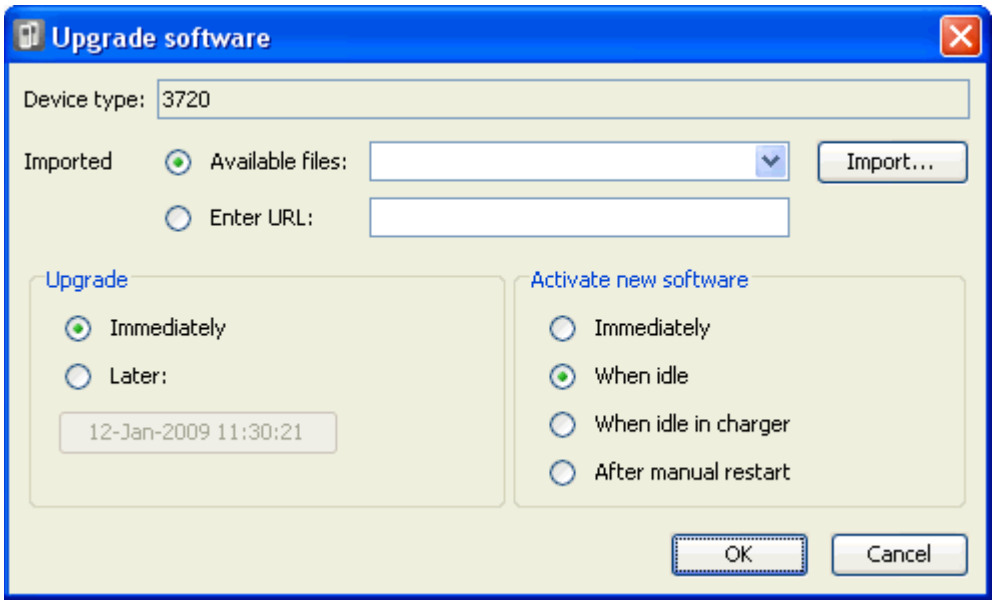
   A software upgrade from AIWS should be done on one device to start with. If successful, the remaining devices can be updated in one operation.

   Tip:

   By using Ctrl and/or Shift it is possible to select several devices simultaneously.
4. Click **Upgrade** in the **Device** menu.

   Alternatively, right-click and choose **Upgrade**, double-click on the desired device, or click the **Upgrade** button in the toolbar.
5. The view changes to the **Upgrade software** dialogue.

Figure 122: The Upgrade software dialogue



In the **Upgrade software** dialogue the following fields are shown:

- **Device type** – shows the model of your device.
- **Imported**
  – The **Available files:** box contains previously imported software files (see Import new Software for Devices on page 345); the latest used software file is selected by default.
  – The **Enter URL:** box gives a possibility to enter a path to a URL.
  – **Import...** is used to import new software.
- **Upgrade**
  – **Immediately** is used to start upgrade immediately
  – **Later**: enter a date and time for a scheduled upgrade. Upgrades can be scheduled about 4 month ahead.
- **Activate new software** – mark **Immediately**, **When idle**, **When idle in charger** or **After manual restart**. depending on when new software shall be activated.

6. If the software to be used for software upgrade is not available, it needs to be imported. If so, click **Import...**. The **Import software** dialogue opens. Locate the file and click **Open**. The software file is imported to the Device Manager.

   It is recommended to use *Enter URL:* if the software is stored on an external server and should not be imported to the Device Manager.

Note:

It is recommended to open a web browser and enter the URL (for example http://myserver/kathy_v1.5.7.bin). Make sure that the web browser asks you to save or open the correct file. Copy the URL and paste it in the Upgrade software dialogue

7. Select software to be used in the upgrade in the **Available software:** text box.
8. Click **OK**. The **Upgrade software** window closes.
9. The software will be downloaded to the device. For some device types, a progress bar in the Status column for the device shows the progress of the download.

   To cancel the upgrade, click **Cancel upgrade** in the **Device** menu. Alternatively, right-click on the device in the device list and select **Cancel upgrade**.

   The device will restart automatically after a successful download and when the handset is idle.

Note:

The Handset will not restart if a missed call popup or a new message popup is active on the handset. This is not considered as an idle state.

A switched off device is upgraded when restarted.

Telephones that are not in the coverage area will be upgraded when they come online.

It is not possible to upload phonebook, language file and software to 3720 telephone while it is on a call.

Delete Parameter Definition Files

1. In the File menu, click **File management**. The **File management** window opens.
2. Click on the **Parameter definition** tab.
3. Select the definition file(s) to be deleted.
4. Click **Delete**.
5. In the **Delete files** dialogue, click **Yes**.
6. Click **Close**.

Delete Software

1. In the File menu, click **File management**. The **File management** window opens.
2. Click on the **Software** tab.
3. Select the software to be deleted.
4. Click **Delete**.
5. In the **Delete files** dialogue, click **Yes**.
6. Click **Close**.

Delete Language

Note:
This applies to language files (.lng). Translation files (.xml) are not deleted.

1. In the File menu, click **File management**. The **File management** window opens.
2. Click on the **Language** tab.
3. Select the Language to be deleted.
4. Click **Delete**.
5. In the **Delete files** dialogue, click **Yes**.
6. Click **Close**.

Import and Export

Import and other file handling of parameter definition files, software files and language files is described in File management on page 342.

Import of translation files (.xml) is desrcibed in Import Translation files on page 390.

The purpose of exporting and importing Numbers and Templates is to be able to move Numbers and Templates to another site or to use at a later time. It is also possible to move between PDM Windows Version and AIWS.

The parameter configuration in Numbers can be exported to a file. This file can be used by the supplier to pre-program devices before delivery to the customer.

If there is a naming conflict when importing a template, the new template is imported and the old template is deleted. If there is a Number conflict when importing Numbers, an error message is displayed.

Export Numbers to a File

It is possible to configure Numbers for a site and export the settings to a file. One or several Numbers can be selected.

The exported file can then be used when producing new devices for the customer.

1. Select the **Numbers** tab. The **Numbers** view appears.
2. Select the Number (or Numbers).
3. In the Number menu, click **Export**.

   The **Export Numbers** dialog appears. By default the file will be saved in the ***My documents*** directory with the name ***[EliseSite].xcp***. You can select another name and directory.
4. Click **Save**.

Export Templates to a File

It is possible to export templates to a file. One or several templates can be selected.

1. Select the **Templates** tab. The **Templates** view appears.
2. Select the template (or templates).
3. In the Template menu, click **Export**.

   The **Export Templates** dialog appears. By default the file will be saved in the ***My documents*** directory with the name Templates.tpl. You can select another name and directory.
4. Click **Save**.

Import Numbers

1. In the **File** menu, click **Import > Numbers...**. A File Browser window appears.
2. Select the Number files to be imported (*.xcp).
3. Click **Open**.
4. The Number(s) will be imported.

Import Templates

A template may be imported from another system. Updated Template files may be distributed by your supplier.

1. In the **File** menu, click **Import>Templates...**. A File Browser window appears.
2. Select the Template files to be imported (*.tpl).
3. Click **Open**.
4. The Template(s) will be imported.

Other Settings

Autosave settings

Normally, when a device logs in, it is automatically saved in the AIWS database and this is the default setting.

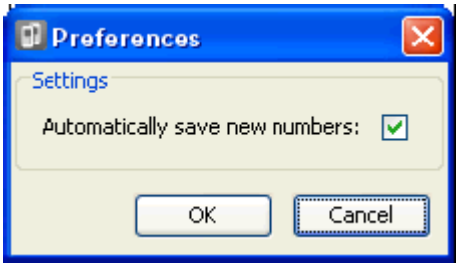
When a single AIWS for the device management is used, the autosave function should normally be enabled if the number of devices is not higher than the maximum number of supported devices according to the license used.

When multiple AIWS for the device management are used in a system, the autosave function should normally be disabled. If multiple device managers are used, and the autosave function is enabled, devices will be saved on all AIWSs running device management. This will cause synchronization problems and the logged in devices will consume licence positions on each AIWS. See also Multiple AIWS configuration on page 296.

To disable automatic saving of new numbers:

1. In the *Options* menu, click “Preferences”. The *Preferences* window appears.

Figure 123: The Preferences window.



2. In the **Preferences** window, disable **Automatically save new numbers**.
3. Click **OK**.

Close the Device Manager

In the **File** menu, click **Exit**. The Device Manager shuts down.

DECT Interface

Cordless Telephone System

IP-DECT Single Master

Figure 124: Redundancy achieved by connecting AIWS to two IP-DECT base stations

AIWS can communicate with the IP-DECT system over a LAN. For configuration of the IP-DECT system, see Installing and operating IPBS on page 51.

It is possible to set an address to a secondary IP-DECT Standby Master which is used as a redundancy backup. The secondary IP Address is used if the connection to the primary IP Address is lost. If the secondary IP Address is lost, AIWS will try to use the primary IP Address.

To enter IP-DECT IP address settings, do as follows:

1. On the AIWS Start page, click on **Setup Wizard**. The **Setup Wizard** opens.
2. Click **Next** until you reach **DECT IP Address**.
3. Enter settings in the fields for **DECT IP Address** and **Secondary DECT IP Address**.
4. Set multiple Locations (former IP regions) to **no**.

IP-DECT multi Master Base Station configuration

For an IP-DECT system with multiple Master Base Stations connected to a single AIWS the IP-DECT interface settings needs to be changed. In this configuration one IP-DECT interface on the AIWS is communication with multiple Master Base Stations on the same or different locations:

1. On the AIWS Start page, click **Setup Wizard**. The **Setup Wizard** opens.
2. Click **Next** until you reach **DECT IP Address**.
3. Set multiple Locations (former IP regions) to **yes**.
4. Do not enter any IP address or remove the entries for the DECT IP-Address and for the secondary DECT IP-Address

Note:

Of course a multi AIWS configuration with splitting services of the AIWS to several Elise hardware units is supported in the same manner, see Multiple AIWS configuration on page 296.

DECT Interface settings

The DECT Interface controls the messaging flow between the Cordless Telephone System and the AIWS services.

General Settings

To find DECT General Settings, do as follows:

1. On the AIWS start page, select **Configuration**. The **AIWS Configuration** page opens.
2. Select Other Settings > Advanced Configuration. The **AIWS Advanced Configuration** page opens.
3. On the **AIWS Advanced Configuration** page, select **General Settings** under **DECT Interface**.

- *Call Diversion Display Text*
  When this parameter is enabled, the text specified is added to the display message when a call diversion takes place. The original Call ID can be included in the parameter text by writing a % character where the Call ID shall be inserted.

Advanced parameters include:

- Extended Activity Log
  N/A
- Broadcast
  Specifies whether broadcast messaging is allowed or not. Only IP-DECT systems can handle broadcast, all other systems will ignore the parameter.
- Set time in DECT
  N/A
- Priority conversion
  Used to convert messaging priorities; Alarm, High, Normal and Low. This conversion is normally only used for compatibility with some PWT telephones and should never be enabled unless you are absolutely sure.

- DECT Interface
  This parameter makes it possible to disable the DECT Interface on AIWS. When the DECT interface is disabled, messaging is not supported and lost link to DECT system will not be indicated.

  In multiple AIWS configurations the DECT interface should be disabled on the the AIWS devices. The DECT interface is not used to connect to the Master Base Stations.
- IM update status handling
- No of included 9dLD locations
  Only valid in combination with Ascom messaging system.

System Dependent Settings

Which parameters that can be changed is dependent on the Cordless Telephone System that AIWS is connected to.

To find IP-DECT settings, do as follows:

1. On the AIWS start page, select **Configuration**. The **AIWS Configuration** page opens.
2. Select **Other Settings > Advanced Configuration**. The **AIWS Advanced Configuration** page opens.
3. On the **AIWS Advanced Configuration** page, select **IP-DECT** under **DECT Interface**.

IP-DECT for single Base Station Master/Standby Master configuration

- *DECT IP address*

  Since the IP-DECT Master is connected over the LAN, the IP address of the IP-DECT Master has to be entered.
- *Secondary DECT IP address*

  If a Standby Master is configured in the IP-DECT system, the IP address of the Standby Master needs to be entered.
- Set multiple Locations (former IP regions) to **No**.

IP DECT for a multi Base Station Master/Standby Master configuration

1. Remove the DECT IP address since there are several Master Base Station in the same system now.
2. Remove the secondary DECT IP address.
3. Set multiple Locations (former IP regions) to **yes**.

Message Distribution

The DECT Interface has distribution lists that define where incoming data from telephones, for example alarms and user data, should be sent. The following information is supported:

To find settings for DECT Message Distribution, do as follows:

1. On the AIWS start page, select **Configuration**. The AIWS Configuration page opens.
2. Select **Other Settings > Advanced Configuration**. The AIWS Advanced Configuration page opens.
3. On the AIWS Advanced Configuration page, select **Messaging Distribution** under DECT Interface.

- Alarm

  Personal alarms with location information from telephones in the Cordless Telephone System.

- Mobile Data

  User data sent from telephones in the Cordless Telephone System.

- Location

  Special Location information from telephones in the Cordless Telephone System. This information can be used to track the route of a telephone in a building.

Note:

The Special Location can be sent every time a cordless telephone gets a new location code from a location device in the system. This requires configuration both in the telephone and in the location device. Also called "Immediate Alarm Transmission"

- Availability

  Includes absence information, i.e. if a telephone is placed in Charger.

The addressing of the receivers is described in Installing Elise 2 Server (AIWS Hardware) on page 421.

Basic Configuration

The basic configuration requires *system administrator* or *administrator* rights. With *user* rights you will only be able to access and configure the *Phonebook*. Refer to Authentication Levels and Default Passwords on page 305.

Central Phonebook Configuration

This chapter describes the configuration of the AIWS Central Phonebook.

The AIWS Central Phonebook gives the possibility to search for phone numbers in a local database or in an LDAP server.

If the search is to be forwarded to an LDAP server, the LDAP parameters need to be configured as described in LDAP Parameter Setup on page 361.

For information on phonebook administration, see Phonebook Administration on page 316.

Note:

If an LDAP connection to a central phonebook is used, all settings needed is done in the setup wizard.

Technical Specification

The local database has defined limitations while most of the limitations for the LDAP server depends on the LDAP server used, see table below.

	Local Database	LDAP Server
Max. No. of phonebook entries:	500/2000	Server dependent
Max. No. of characters in family name:	20	Server dependent
Max. No. of characters in first name:	20	Server dependent
Max. No. of digits in phone number:	20	Server dependent
Max. No. of returned entries / request:	25	25
telephones that can access the phonebook[1]	Depends on telephone type	

1. See also documentation for the telephone

Phonebook address

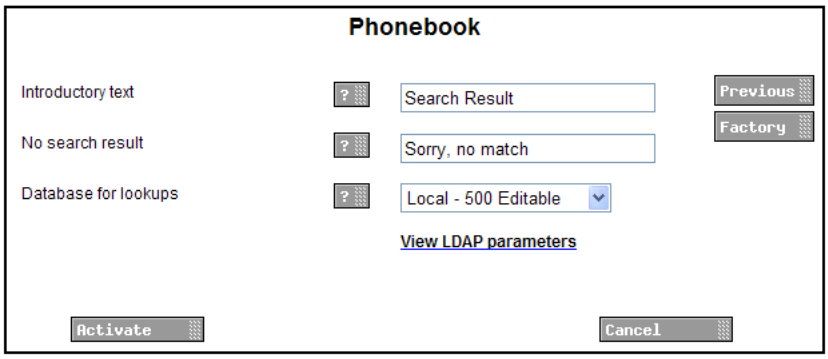
The default Call ID is 999999 for phonebook access. Do as follows to change the address:

1. On the **AIWS start page**, click on **Configuration**. The **AIWS Configuration** page opens.
2. In the left pane, click **Other settings > Advanced configuration**. The **AIWS Advanced Configuration** page opens.
3. In the left pane, under **Other**, click **UNS**
4. Click on **Alias / Call ID**.
5. Click **999999** in the list.
6. Enter the new Call ID for the phonebook, i.e. the Call ID the telephones are using to access the phonebook. Check that the Call ID does not conflict with any of the telephones in the system.

1.

Phonebook Setup

Figure 125: AIWS Phonebook Setup

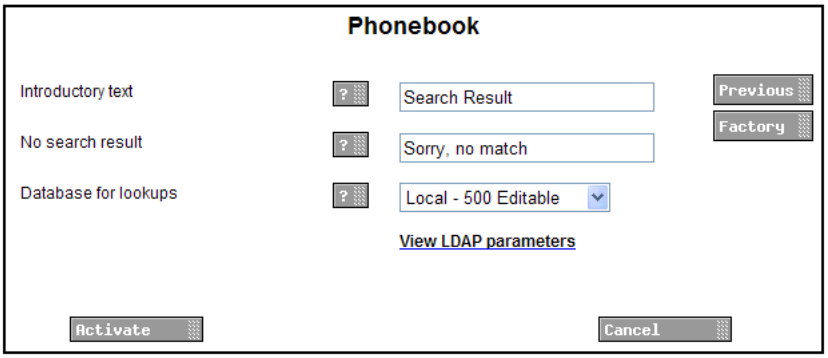


Enter Search result texts

When a request is sent to the phonebook, a text is included in the response that is sent to the telephone. These texts can be customized, for example translated.

1. On the AIWS start page, click on **Configuration**. The **AIWS Configuration** page appears.
2. In the left pane, click **Other settings > Advanced Configuration**. The AIWS Advanced Configuration page appears.
3. In the left pane, click **Phonebook**.The **Phonebook** page appears.

Figure 126: Central Phonebook Setup



Search direction **Right to left** means that the Central Phonebook returns entries that ends with the entered search criteria.

Note:

If the LDAP phone book is selected, the search direction will always be left to right. So the direction setting will not be valid in this case.

4. Enter the texts that should be included in the search result, see table below for more information about the different texts and when they are used.

Default text	Description
Search result	Included in a successful request before the entries that matched the request
Sorry, no match	Sent when there were no match for the sent request.

Note:
This setting does not affect all handset types.

5. Click **Activate**.

Select Phonebook Database for Central Phonebook

Select which database to use for phone numbers; **Local - 500 Editable**, **Local - 2000 View only**, **TFTP** or **LDAP**.

- If the default local database is selected, continue below in chapter Import Entries to the Phonebook from a CSV File on page 319, Export the Phonebook to a CSV File on page 320 and Add Entries to the Phonebook on page 316.
- If LDAP server is selected, continue in chapter LDAP Parameter Setup on page 361.
- If TFTP is selected, continue in chapter 10.1.8 TFTP Parameter Setup on page 84.

Select database to use for the Central Phonebook.

1. On the AIWS start page, click **Configuration**. The **AIWS Configuration** window opens.
2. In the left pane, click **Other settings > Advanced Configuration**. The **AIWS Advanced Configuration** page opens.
3. In the left pane, click **Phonebook**. In the **Database for lookups** field, choose between **Local - 500 Editable**, **Local - 2000 View only**, **LDAP** and **TFTP**.

If **Local - 2000 View only** is chosen, the **Add** and **Delete all** buttons are not visible in the Edit Phonebook pages.

LDAP Parameter Setup

The Lightweight Directory Access Protocol (LDAP) is an application protocol for querying and modifying directory services running over TCP/IP. The AIWS starts an LDAP session by connecting to an LDAP server. The AIWS then sends operation requests to the server, and the server sends responses in return.

An LDAP directory is a tree of directory entries and follows the structure below:

- An entry consists of a set of attributes.

- An attribute has a name and one or more values.

An entry can look like this:

dn: cn=John Ericson,dc=company,dc=com

cn: John Ericson

givenName: John

sn: Ericson

telephoneNumber: +1 888 555 6789

dn is the name of the entry; it is not an attribute nor part of the entry. "cn=John Ericson" is the entry's RDN, and "dc=company, dc=com" is the DN of the parent entry. The other lines show the attributes in the entry. Attribute names are typically mnemonic strings, like **cn** for common name, **dc** for domain component, **mail** for e-mail address and **sn** for surname. See Examples of Settings on page 363.

1. On the **AIWS start page**, click on Configuration. The **AIWS Configuration** page opens.
2. Click on **Other settings > Advanced Configuration**. The **AIWS Advanced Configuration** page appears.
3. In the left pane, click on Phonebook. The **Phonebook** page appears.
4. Click the **LDAP Settings** link.
5. Enter the IP or DNS address to the LDAP server in the **LDAP Server Address** field.
6. Enter the port number used by the LDAP server in the **Port Number** field.
7. Select how to aVuthenticate to the LDAP server in the **Authentication Method** drop down list.

Note:

If the authentication method "SASL/DIGEST-MD5" is selected, the IP address for primary DNS server must be entered in the DNS server field on the Network setup page. Otherwise it is not possible to authenticate with the LDAP directory Microsoft Active Directory 2003.

8. Enter the user name used for logging on to the LDAP server in the **User name** field. It is a good idea to create a new user in the domain with access for the LDAP server.
9. Enter the password used for logging on to the LDAP server in the **Password** field.
10. Enter the user entries' parent DN in the **Search Base DN** field.
(The distinguished name for all users common entry.)
11. Enter the name of the attribute that holds the phone numbers in the **Number attribute** field.

12. Select the appropriate option in the **Type of Name Attribute(s)** drop down list.

    The option depends on if the name is stored in a single attribute or if it is splitted into two different attributes.

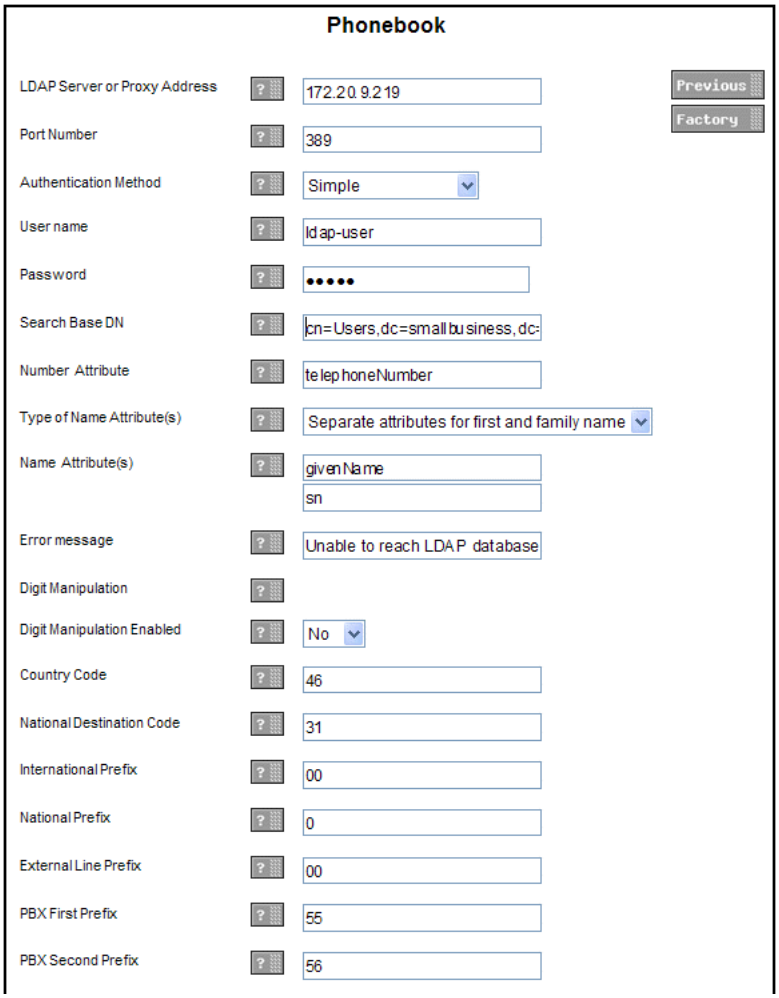
13. Enter name(s) of the attribute(s) containing first name and family name in the **Name Attribute(s)** field. If two attributes are used, enter the first name on the first line and the family name on the second line.

14. Enter an error message to be sent as an answer to a phonebook query that was unsuccessful, due to no answer from the server, in the **Error message** field.

Examples of Settings

- Active directory 2003

Figure 127: Settings for Active directory 2003



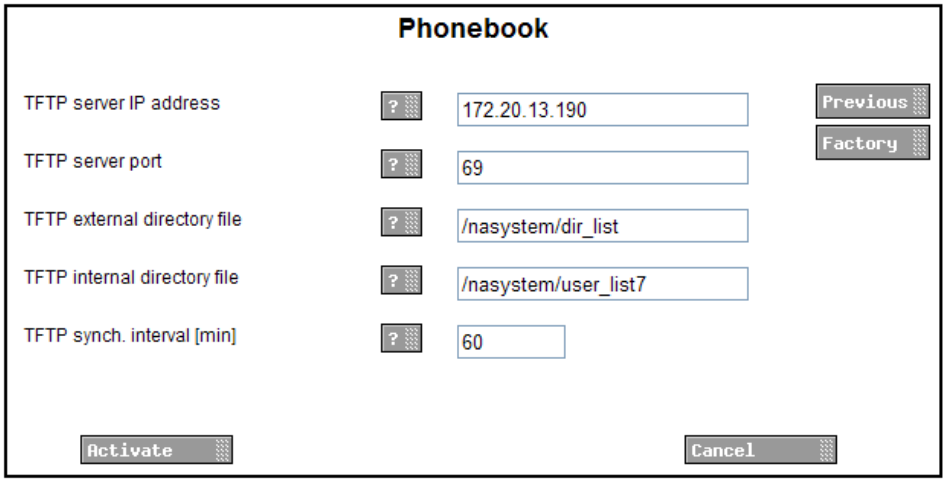
TFTP Parameter Setup

If TFTP is selected, it means that phonebook searches will return entries from the Avaya PBX via TFTP.

To do settings for TFTP, do as follows:

1. On the **AIWS start page**, click on Configuration. The **AIWS Configuration** page opens.
2. Click on **Other settings > Advanced Configuration**. The **AIWS Advanced Configuration** page appears.
3. In the left pane, click on Phonebook. The **Phonebook** page appears.
4. Click the **TFTP settings** link.
5. Enter the IP address to the TFTP server in the **TFTP server IP address** field.
6. Enter the port number used by the TFTP server in the **TFTP server port** field.
7. Enter the external directory file path in the **TFTP external directory file** field.
8. Enter the internal directory file path in the **TFTP internal directory file** field.
9. Enter the TFTP synchronization interval in minutes in the **TFTP synch. interval** field.
10. Click on Activate.

Figure 128: Example of TFTP settings



Digit Treatment in Central Phonebook

When importing telephone numbers it is sometimes necessary to automatically change the way a number is written according to preset conditions.

Depending on where a number is situated, the AIWS can alter the number that is returned in a phonebook query. If, for example, the queried number is situated within the same local exchange, the telephone number is considered to be an internal number and the number is stripped from superfluous international prefixes, etc.

This feature is only used if LDAP is selected as database.

Telephone number standards

There are several standardized ways of writing telephone numbers.

The following formats are currently supported:

Format	Comment
+4631559300	E.164 international standard, and E.123
(031)-559300	E.123 local number
+46(031)559300	National prefix + national destination code in parentheses
+46(0)31559300	National prefix in parentheses
+46(31)559300	Canonical address format
4631551234	Digits only. Conversion is controlled by setting maximum lengths of internal and global numbers.

Examples

The following figure shows the elements of a telephone number, +46(31)551234 (in canonical format), used in the parameter descriptions below.

Figure 129: Example of how a telephone number is built up from different prefixes and extensions.

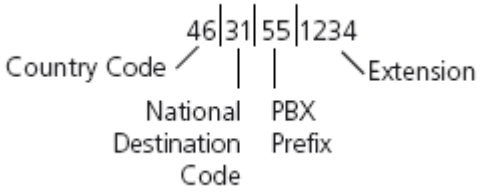
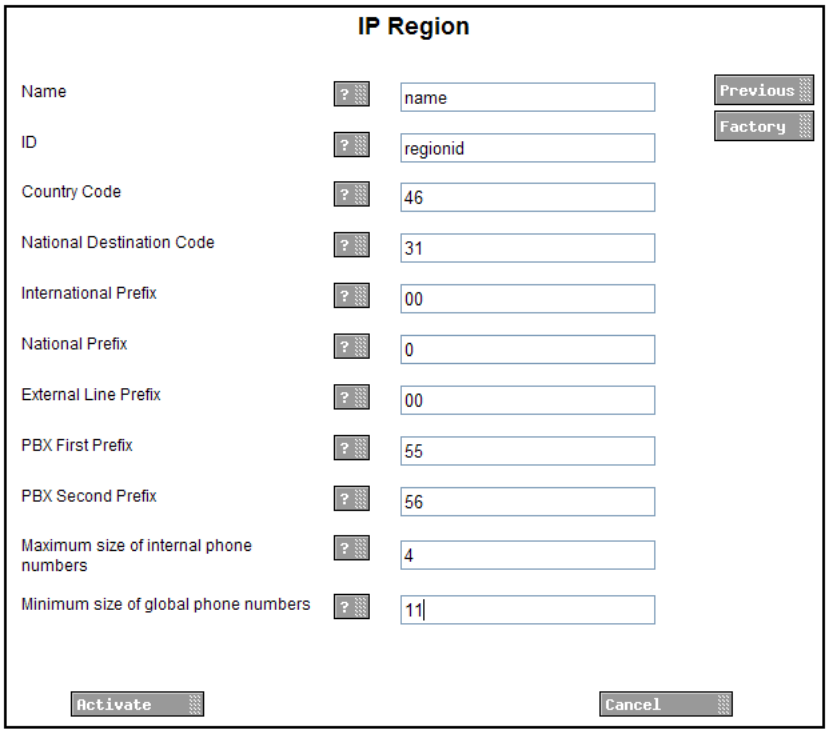


Figure 130: Example of a digit treatment setting for Location (former IP region)



The following examples illustrates how digit treatment works in different queries. The queries are considered to be done from within +463155xxxx (local exchange), see also figure 130 above.

- Example 1: The query is within the same local exchange.

  Queried number: 551234

  Digit treatment identifies 55 as the local exchange prefix and strips 55 from the number.

  Resulting number: 1234

- Example 2: The query is within the same city (area code), but outside the local exchange.

  Queried number: 031612500

  Digit treatment identifies 0 as National Prefix and 31 as National Destination Code, strips 031from the number and adds 00 for external line.

  Resulting number: 00612500

- Example 3: The query is within the same country, but not in the same city.

  Queried number: 035158115

  Digit treatment identifies 0 as National Prefix and 35 as National Destination Code and adds 00 for external line.

  Resulting number: 00035158115

- Example 4: The query is within another country.

  Queried number: +4781530555

  Digit treatment identifies "+47" as an international call, skips the "+", and adds 00 for external line prefix and 00 for international prefix.

  Resulting number: 00004781530555

- Example 5: Size of internal number.

  Queried number: 1234

  Digit treatment identifies that the number of digits in the telephone number is equal to the number of digits entered as "maximum size of internal phone numbers".

  Resulting number: 1234

- Example 6: Size of global number.

  Queried number: 47815305555

  Digit treatment identifies that the number of digits in the telephone number is equal to the number of digits entered as "minimum size of global phone numbers", then adds 00 for external line prefix and 00 for international prefix.

  Resulting number: 000047815305555

Digit treatment settings

The parameters for digit treatment is set via the AIWS **Configuration** page:

Digit treatment can be enabled and disabled. When enabled, digit treatment is defined per Location (former IP region).

1. On **AIWS Start Page**, select Configuration.
2. In the left pane, select **Other Settings** > **Advanced Configuration**. The **AIWS Advanced Configuration** page appears.
3. Select Phonebook. The **Phonebook** page appears.
4. Click **IP Regions Settings**.
5. Select Digit Treatment to be Enabled or Disabled.
6. Click **Activate**.
7. For each Location (former IP region) to be used, enter the **Location** (former **IP region**) page.
8. Enter settings for Location (former IP region) and digit treatment.
9. Click **Activate**.

The following parameters can be configured for digit treatment:

- Digit Treatment (Enabled or Disabled)

  The digit treatment function can be enabled and disabled. If the function is enabled, the parameters below apply, otherwise they do not apply.

- Name
  A textual description of the current Location (former IP region).

- ID
  An identifier for the Location (former IP region) represented by a numerical value between 1-250. The Location ID (former region ID) set in the IPBS Master or Standby Master needs to correspond to one of the configured Location ID (former Region IDs) in the AIWS. The digit treatment for a central phonebook query in the handsets will be done according to the defined rules for the Location (former IP region) of the IPBS Master and Standby Master the handset is connected to. Multiple IPBS Masters and Standby Masters in an IP DECT system can use the same Location ID (former Region ID), so they will use the same digit treatment rules.

- Country Code

  The Country Code is the prefix to be used when dialling to a particular country from another country. The country code is what follows after the + in a telephone number.

  The value is used to identify the country code in the number and remove it when it is not needed.

- National Destination Code

  The National Destination Code (NDC) is what follows after the country code in a telephone number.

  The value is used to identify the NDC in the telephone number and remove it when it is not needed.

- International Prefix

  The International Prefix is used to dial a call from a particular country to another country. This is followed by the country code for the destination country.

  This value is used to replace the + character when an international call is made.

- National Prefix

  National Prefix is used to make a call within a country from one city to another. The national prefix is followed by the national destination code for the destination of the call.

  This value is used for two purposes:

  – To identify the national prefix in the number and remove it when it is not needed.
  – To change a number when the destination is another city.

- External Line Prefix

  External Line Prefix is what needs to be dialled before the number to reach the public network.

  The value is used to change the telephone number if it is identified as an external number.

- PBX First Prefix

  PBX First Prefix is what precedes an internal number to create an external number.

  This value is used to compare with the phonebook number to decide whether the number is internal or external.

- PBX Second Prefix

  Points out an additional prefix to be handled in the same way as “PBX First prefix”.

- Maximum size of internal telephone numbers

  Used for numbers that starts with a digit instead of “+” or “(“. If the number is longer than this value, it is considered to be an external number.

- Minimum size of global telephone numbers

  Used for numbers that starts with a digit instead of “+” or “(“. If the number is equal to or longer than this value, it is considered to be a global number.

Status

On these pages, information on active faults or stored faults can be shown.

Active Faults

Active Faults page is where all persistent fault logs are listed. For more information about the fault log, refer to Fault Log on page 371.

1. Click **Configuration** on the start page.
2. Select **Status** > **Active Faults** in the left menu on the **AIWS Configuration** page to open the page.

The following information is shown for each fault:

- Time when the fault occurred
- Level of the fault:
  - Critical error
  - Error
  - Warning
- Description of the fault, as defined in the module
- Type of module
- IP address and host name of the module that generated the fault

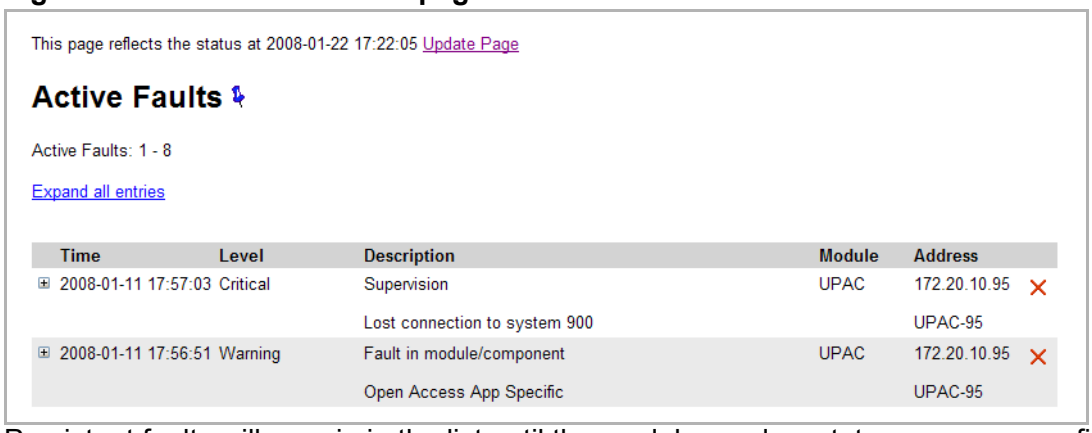
By expanding the fault in the list, additional information about the fault is shown containing:

- Fault ID

  This is used to reference a persistent fault when it later is reset
- Fault code
- Description of the fault code
- Extended address information showing the system, bus type and module address

  In the figure below the system is 00, the bus type is 1 and the module address is 0A.

Figure 131: The Active Faults page



Persistent faults will remain in the list until the module sends a status message confirming that the module is working properly again. It is also possible to delete the fault in the list by clicking the delete symbol.

Note:

If the IP address or licence is changed in AIWS, the faults reported for the previous IP address/licence will remain since no confirmation can be received. These faults must be manually deleted.

The active faults list page has to be manually updated by clicking the **Update Page** link uppermost on the page.

On this page, the error relay can be reset. See also Function Indicator and Error Relay Output on page 417 and Installing Elise 2 Server (AIWS Hardware) on page 421.

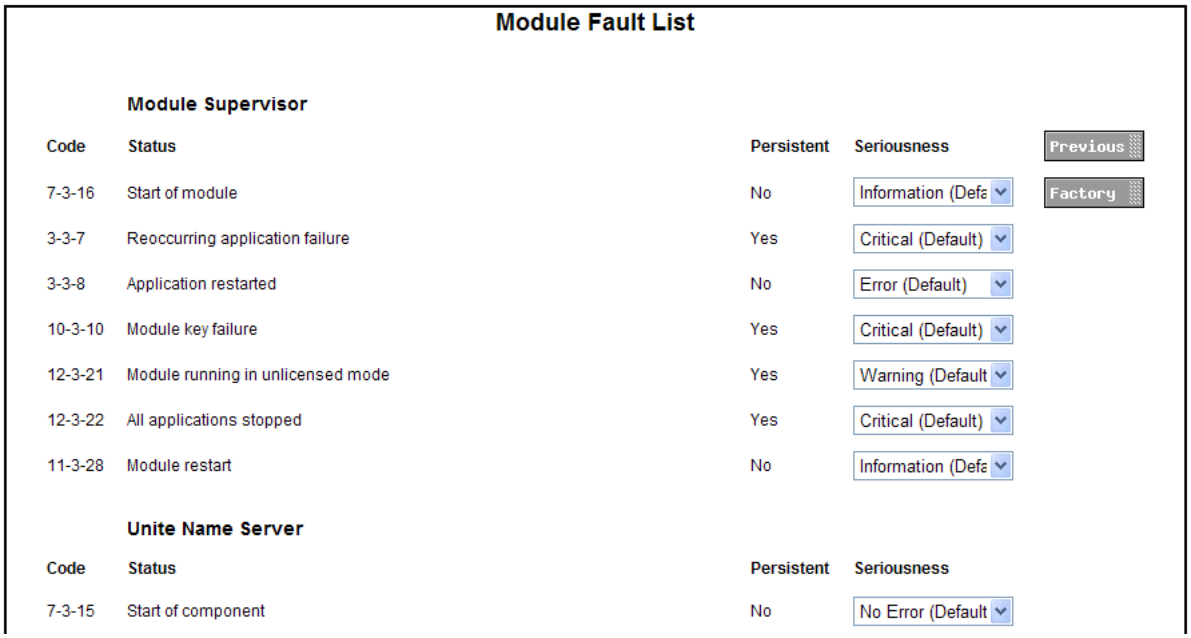
Module Fault List

There is a list of all possible module faults, which shows codes and statuses etc. for AIWS.

1. Click **Configuration** on the start page.
2. Select **Other Settings** > **Advanced Configuration** in the left menu on the **AIWS Configuration** page.
3. Click the **Troubleshoot** button and select **Module Fault List** in the left menu to open the list.

In the Module Fault list page it is possible to change settings on which level to use.

Figure 132: Part of the Module Fault list page.



Fault Log

The AIWS fault log is a centralised log file and shows a complete log of the faults in the system. Every time a fault message is generated in the system, information about the fault is written to the log file. The maximum number of entries in the log file is 1050. When the log file is full, the 50 oldest entries are removed.

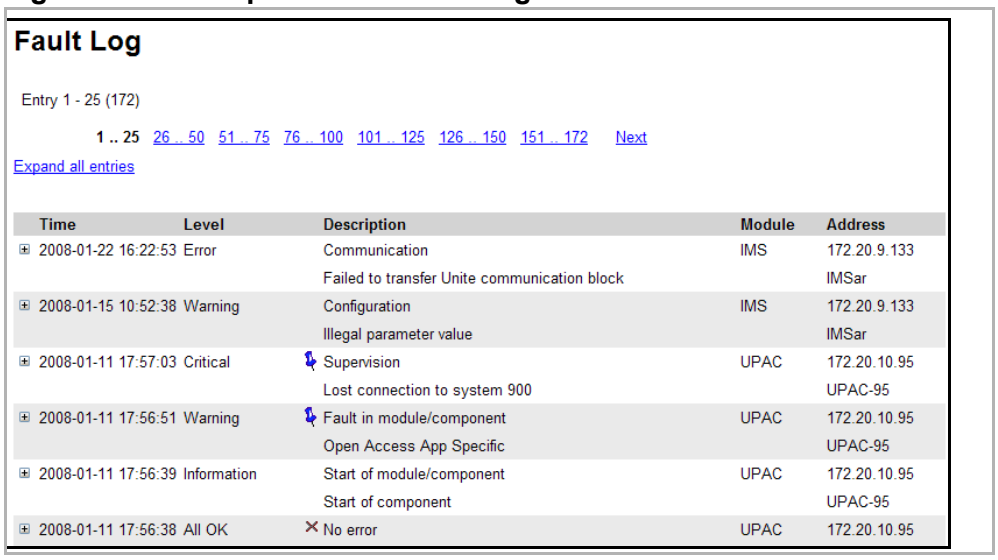
1. Select **Status** > **Fault log** in the left menu on the **AIWS Configuration** page to open the page.

The first 25 log entries are shown. To get the following 25 log entries, click the **Next** link.

The following fault levels exist in the log:

- Information
- Individual reset
- All OK
- Critical error
- Error
- Warning

Figure 133: Example of AIWS fault log.


Fault Log
Entry 1 - 25 (172)
1 .. 25 26 .. 50 51 .. 75 76 .. 100 101 .. 125 126 .. 150 151 .. 172 Next
Expand all entries
Time Level Description Module Address
2008-01-22 16:22:53 Error Communication IMS 172.20.9.133
Failed to transfer Unite communication block IMSar
2008-01-15 10:52:38 Warning Configuration IMS 172.20.9.133
Illegal parameter value IMSar
2008-01-11 17:57:03 Critical Supervision UPAC 172.20.10.95
Lost connection to system 900 UPAC-95
2008-01-11 17:56:51 Warning Fault in module/component UPAC 172.20.10.95
Open Access App Specific UPAC-95
2008-01-11 17:56:39 Information Start of module/component UPAC 172.20.10.95
Start of component UPAC-95
2008-01-11 17:56:38 All OK No error UPAC 172.20.10.95

Symbols used in the Fault Log

Symbol	Description
	Active persistent fault
	Persistent fault that has been handled
	Reset message, no fault exists

To get more detailed information about the events, it is possible to expand the log entries by clicking the **Expand all entries** link. Single log entries can be expanded by clicking the individual plus symbol.

Note:
When the persistent fault is recovered, it takes a while before the persistent fault is cleared.

Administer Fault Log

In the **Administer Fault Log** page, it is possible to export the log file to CSV (Comma Separated Values) file format, and to clear the status log file from non-active faults.

1. Click **Configuration** on the start page.
2. Select **Other Settings** > **Administer Fault Log** in the left menu on the **AIWS Configuration** page to open the page.

Export Fault Log

Click to export the fault log. The log will be exported in csv format.

1. Click **Export**.
2. Click **Save** in the dialogue window and enter the file name (default name statuslog.csv) and the file path.

Clear Fault Log

This functionality removes all non-active faults from the fault log.

1. Click **Clear**.
2. Click **Yes** in the dialogue window to remove all non-active faults from the status log file.

Timeout

Repeated faults can be blocked, i.e. the fault will be discarded and no actions will be taken. The incoming fault will be handled when first received and blocked during the set timeout.

1. Enter the timeout in minutes (0-1000 minutes), the default value is 10 minutes.

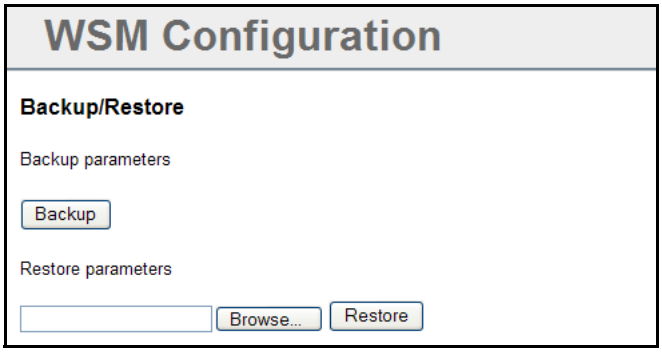
   If no Status Logs should be blocked, set the timeout to 0.
2. Click **Set timeout** to save the setting.

Backup the Configuration

This instruction is used to backup the Device Manager database and ELISE2 configuration. The backup file is saved in a proprietary file format and cannot be edited. Save it in a place where you can easily find it for a restore.

1. On the **AIWS Start page**, click on **Configuration** and log in.
2. Click on **Other Settings** in the left menu.
3. Click on **Backup/Restore**. The **Backup / Restore** view appears.

Figure 134: Parameter Backup / Restore



4. To make a backup file of the current configuration, click **Backup** in the **Backup/Restore** window. The File Download popup appears.
5. Click **Save**. The **Save As** popup appears.
6. Select a location and enter a file name, then save the file.

Note:

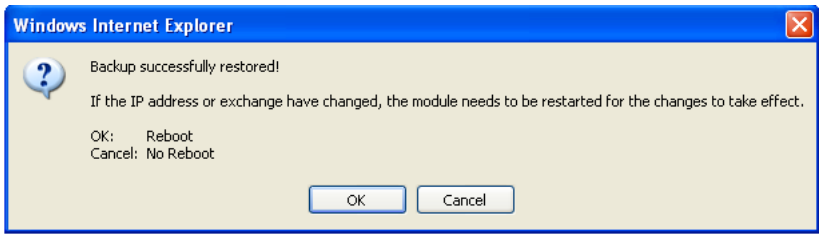
The backup does not include customized GUI's (including Netpage files), software files (.bin files) and certificates.

Restore the Configuration

Note:

When the AIWS is restored, all changes that have been made since the last backup will be discarded.

1. Click **Configuration** on the start page.
2. Select **Other Settings > Backup/Restore**. The **Backup / Restore** view appears.
3. Click **Browse...** and select the backup file.
4. Click the **Restore** button. An information window will open and inform you when the restore is ready.
5. If the IP address or exchange has changed, click **OK** to reboot, else click **Cancel**.


Windows Internet Explorer
Backup successfully restored!
If the IP address or exchange have changed, the module needs to be restarted for the changes to take effect.
OK: Reboot
Cancel: No Reboot
OK
Cancel

Since the .bin files are not restored, this has to be done manually. See Import new Software for Devices on page 345 or Import new Software for Devices on page 345.

Restore of Netpage files is described in Files for Translation/Editing on page 391.

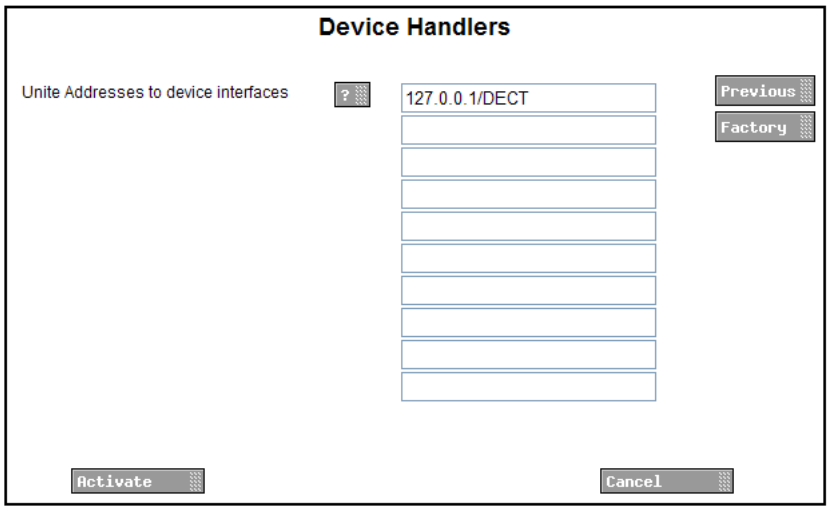
Device Configuration

Device Management setup

This setup page is used to set addresses to the interfaces that the devices are connected to.

1. On the AIWS Start page, click **Configuration**. The **Configuration** page opens.
2. In the left pane, select **Other Settings** > **Advanced Configuration**. The **AIWS Advanced Configuration** page appears.
3. Click **Device Management**. The **Device Handlers** page appears.

Figure 135: The Device Handlers page.



4. Enter Unite address to the interfaces that the devices are connected to.

Device Handling Configuration

It is possible to set the types of devices that can login to AIWS. This enables a possibility to for example enable portable devices log in to one device manager and to enable chargers to log in to another device manager.

1. Login to AIWS.
2. Click on **Configuration**.

3. In the left pane, select **Other Settings > Advanced Configuration**.
4. Under DECT Interface, select **Device Handling**.
5. Select the ***device type*** to enable/disable login from
6. Change ***Status*** to desired value
7. Click **Activate**

On-line Status Report Time for chargers

It is possible to set how often a device type must "log in" in order to be considered on-line. This is called "On-line Status Report Time". To enable moving a charger without being logged out, it is possible to set a "Status Log Delay Time".

If the device has not logged in again within the On-line Status Report Time, the Status Log Delay Time starts ticking. If the device does not log in again within that time a Status Report is sent to the Fault Log.

1. Login to AIWS
2. Click **Configuration**.
3. In the left pane, select **Other Settings > Advanced Configuration**.
4. In the left pane, select **Device Handling**.
5. Click on the ***device type*** to change settings for.
6. Enter **On-line Status Report Time** in minutes.
7. To set the margin, enter **Status Log Delay Time** in minutes.
8. Click **Activate**.

On-line Status Report Time for portable devices in a charging unit

It is possible to set how often a portable device type placed in a charging unit must "log in" in order to be considered on-line. This is called "On-line Status Report Time".

If the device has not logged in again within the On-line Status Report Time, it will be considered off-line.

1. Login to AIWS
2. Click **Configuration**.
3. In the left pane, select **Other Settings > Advanced Configuration**.
4. In the left pane, select **Device Handling**.
5. Click on the ***device type*** to change settings for.
6. Enter **On-line Status Report Time** in minutes.
7. Click **Activate**.

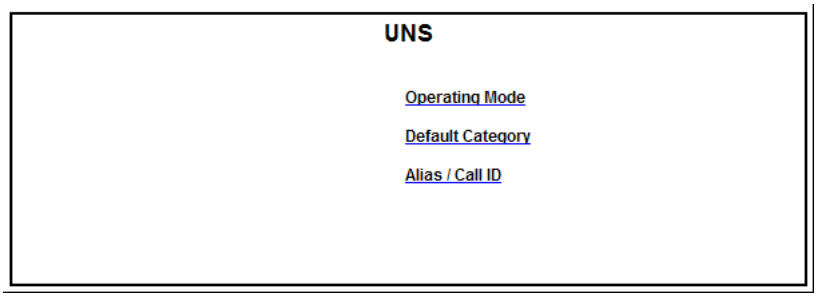
Additional System Settings

Unite Name Server (UNS)

The UNS is used to resolve addresses into complete destinations. The AIWS can be configured to send all requests to the local UNS (stand-alone mode) or to forward all requests to a centralized UNS (forwarding mode). In forwarding mode, the local UNS will only be used if the centralized UNS cannot resolve the address.

1. Click **Configuration** on the start page. The **Configuration** page appears.
2. Select **Other Settings** > **Advanced Configuration** in the left menu in the **AIWS Configuration** page. The **Advanced Configuration** page appears.
3. Under Other, click **UNS**. The UNS page appears.

Figure 136: The UNS page.

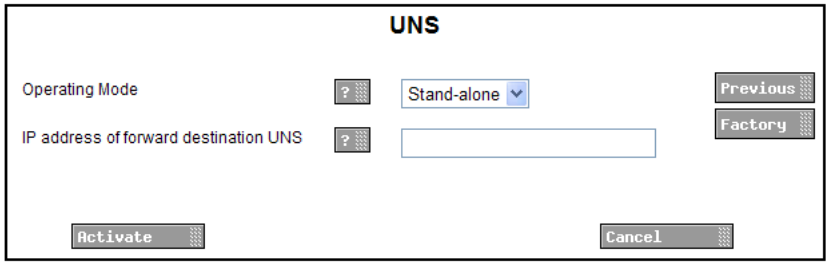


Operating Mode

Operating mode is changed in systems with an ESS only.

1. To set Operating mode, click **Operating mode**. The **UNS Operating Mode** page appears.

Figure 137: The UNS Operating Mode page.



2. In a system with an ESS, set operating mode to Forwarding and enter the ESS IP address.

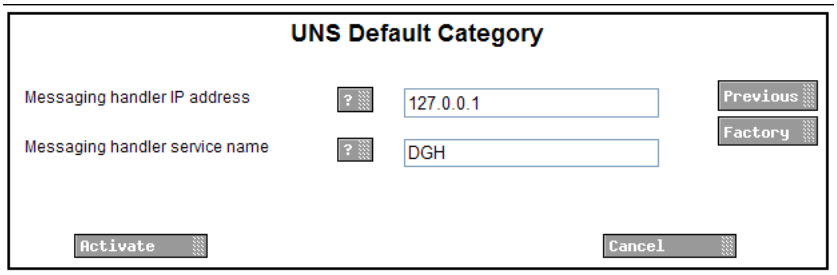
3. Click **Activate**.

Default Category

The UNS Default Category is used to decide where messages from the AIWS shall be sent. This parameter is changed when the IP-DECT system is connected to another module.

1. To set Default Category, click **Default Category**. The **UNS Default Category** page appears.

Figure 138: The UNS Default Category page.



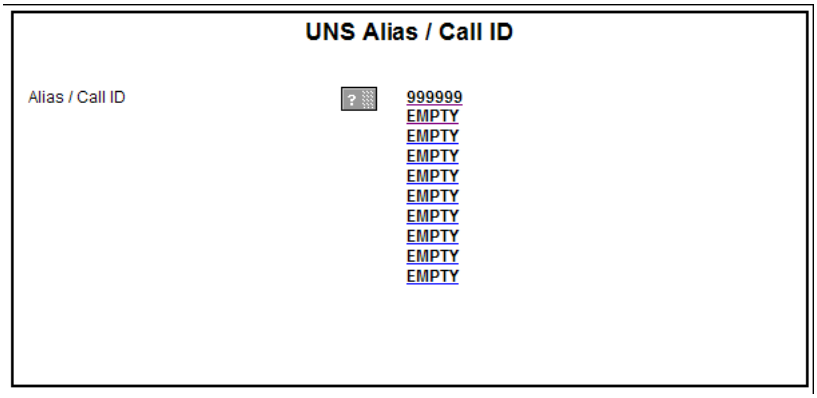
2. Enter the IP address of the module with the IP-DECT system connected. Set messaging handler to DGH.
3. Click **Activate**.

Alias / Call ID

Alias can be used when there are numbers that do not belong to the default category.

1. To set Alias / Call ID, click **Alias / Call ID**. The **UNS Alias / Call ID** page appears.

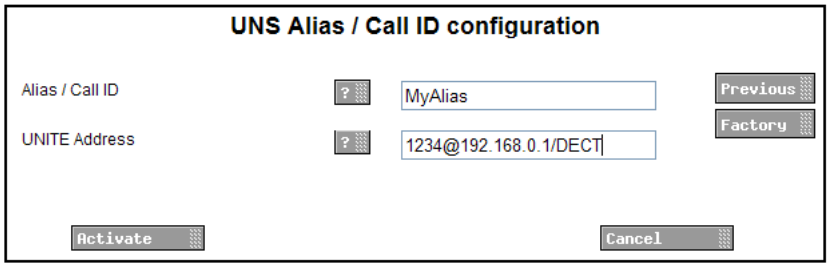
Figure 139: The UNS Alias / Call ID page.



999999 is a preset alias used for phonebook queies. It shall normally not be changed.

2. Click one of the links. The **UNS Alias / Call ID configuration** page appears.

Figure 140: The UNS Alias / Call ID configuration page.



3. Enter settings for UNS Alias / Call ID.

   In this example, a message that is addressed to **MyAlias** will be sent to the handset with telephone number 1234 in the IP-DECT system that is connected to the AIWS with the address 192.168.0.1.

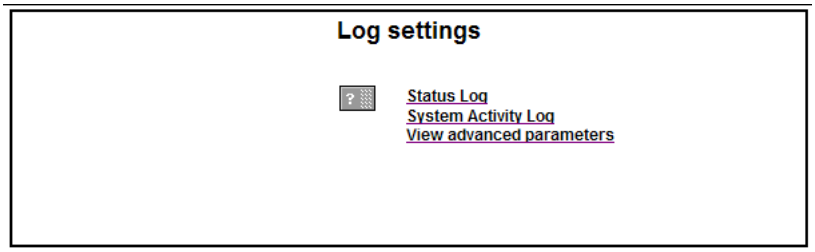
4. Click **Activate**.

Logging

Status information can be stored locally, but can also be sent to a central log. The System Activity Log can store **activities** such as messages, alarms, faults, input/output activities, etc. Activity logging is useful for troubleshooting. An ESS is needed for Activity Logging.

1. Click **Configuration** on the start page. The **Configuration** page appears.
2. Select **Other Settings** > **Advanced Configuration** in the left menu in the **AIWS Configuration** page. The **Advanced Configuration** page appears.
3. Under Other, click **Logging** The **Log settings** page appears.

Figure 141: The Log settings page.



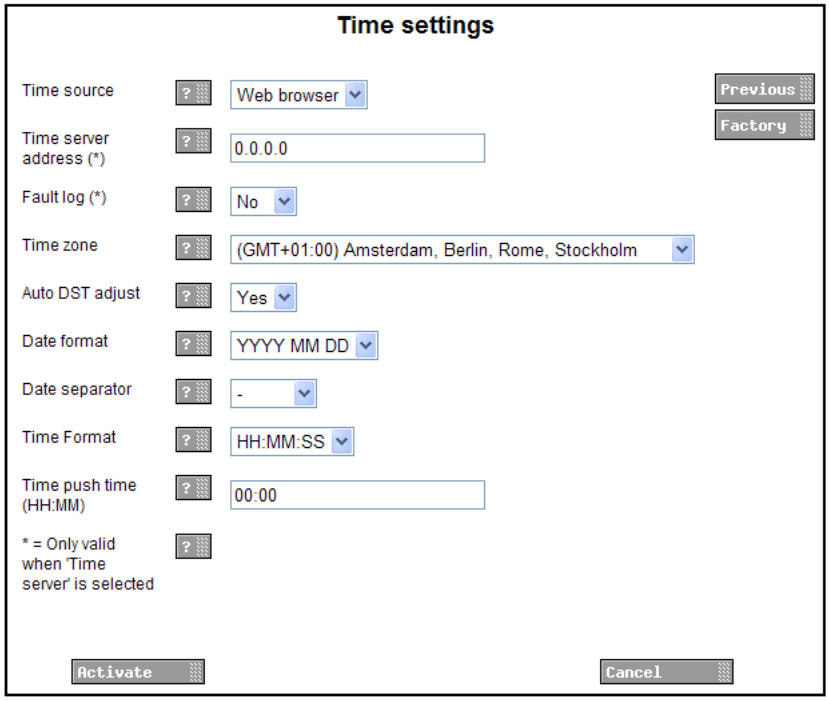
4. Click **Status Log**, **System Activity Log** or **View Advanced parameters**.
5. In the selected log page, enter settings. Click **Activate**.

Time Settings

It is possible to select where to fetch the time from, such as a web browser or a time server.

1. Click **Configuration** on the start page. The **Configuration** page appears.
2. Select **Other Settings** > **Advanced Configuration** in the left menu in the **AIWS Configuration** page. The **Advanced Configuration** page appears.
3. Under Time, click **Settings** The **Time settings** page appears.

Figure 142: The Time Settings page.



4. Enter time settings.
5. Click **Activate**.

The following parameters can be set via the Advanced Configuration page. Some of these parameters can also be set in the Setup wizard.

- Time source
- Time server address
- Fault log
- Time zone
- Auto DST adjust
- Date format

- Date separetor
- Time Format
- Time push time

For additional information, see also Installing Elise 2 Server (AIWS Hardware) on page 421.

Set time

If Web browser has been selected as time source, the time must be set manually. Otherwise this setting shall not be done.

1. Under Time, click **Set time** The **Set Date and Time** page appears.

Figure 143: The Set Date and Time page.

Set Date and Time
Current date is: 2009-06-02
Current time is: 06:59:18 (reload)
Please Note! The time cannot be set from here unless the "Time source" parameter in Time Settings is set to "Web Browser".
Local PC Date
2009-06-02
Local PC Time
10:59:48
Submit Time
Close

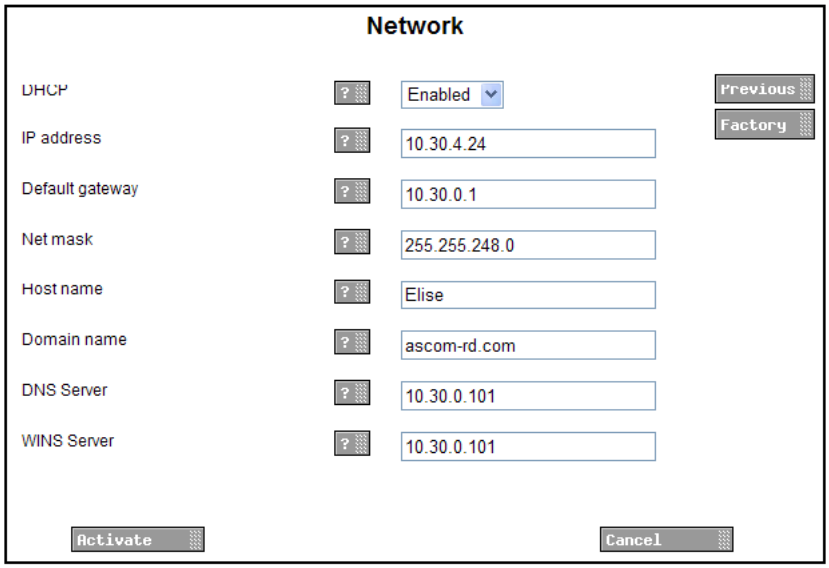
2. Enter date and time. Click **Submit time**.

Date and time can also be set in the Setup wizard.

Network Settings

1. Click **Configuration** on the start page. The **Configuration** page appears.
2. Select **Other Settings** > **Advanced Configuration** in the left menu on **AIWS Configuration** page. The **Advanced Configuration** page appears.
3. Under Common, click **Network** The **Network** page appears.

Figure 144: The Network page.



The following parameters can be set via the Advanced Configuration page. Some of these parameters can also be set in the Setup wizard.

- DHCP
- IP address
- Default gateway
- Net mask
- Host name
- Domain name
- DNS Server
- WINS Server

For additional information, see also Installing Elise 2 Server (AIWS Hardware) on page 421.

Setting Licence Number

It is possible to enter the licence number via the **Advanced Configuration** page and the Setup Wizard. To set via the **Advanced Configuration** page

1. Click **Configuration** on the start page. The **Configuration** page appears.
2. Select **Other Settings** > **Advanced Configuration** in the left menu in the **AIWS Configuration** page. The **Advanced Configuration** page apperars.
3. Under Common, click **Licence** The **Licence** page appears.
4. Enter Licence number. Click **Activate**.

Reboot

It is possible to reboot the AIWS via the **Advanced Configuration** page.

1. Click **Configuration** on the start page. The **Configuration** page appears.
2. Select **Other Settings** > **Advanced Configuration** in the left menu in the **AIWS Configuration** page. The **Advanced Configuration** page apperars.
3. Under Common, click **Reboot** The **Reboot** page appears.
4. To reboot the AIWS, click **Reboot**.

Absence Handling

Note:

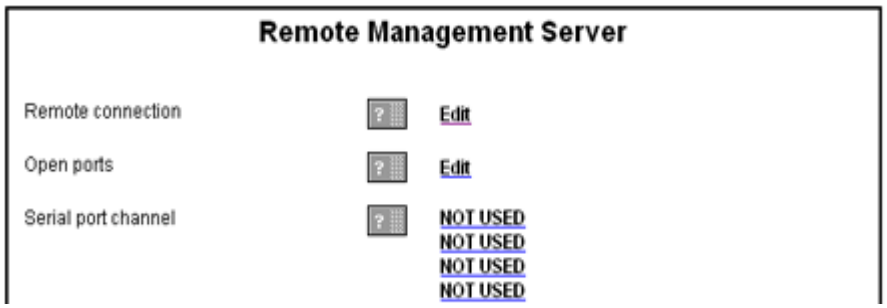
The Absence List feature are not supported by the Avaya IP-DECT system.

Remote Management

Through the AIWS, it is possible to establish a remote connection to a customer site. This makes it possible to configure and maintain sites, independent of distance.

To be able to connect remotely, the remote management server in the AIWS has to be configured. The helptext buttons in the GUI will give more information about each parameter setting.

1. Click **Configuration** on the start page.
2. Select **Other Settings** > **Advanced Configuration** in the left menu on **AIWS Configuration** page.
3. Select **Remote Management** in the left menu. The **Remote Management Server** configuration page is opened.

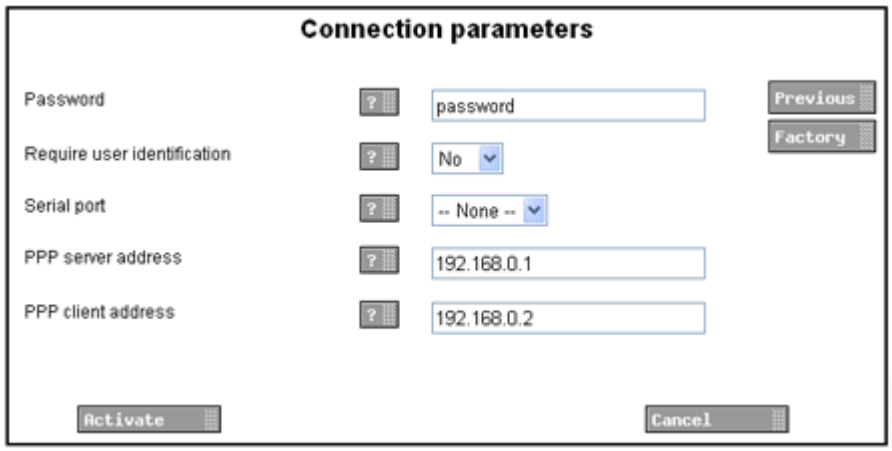


Remote connection

1. Click **Edit** for Remote Connection, to set up the connection parameters.

   Parameter notes:

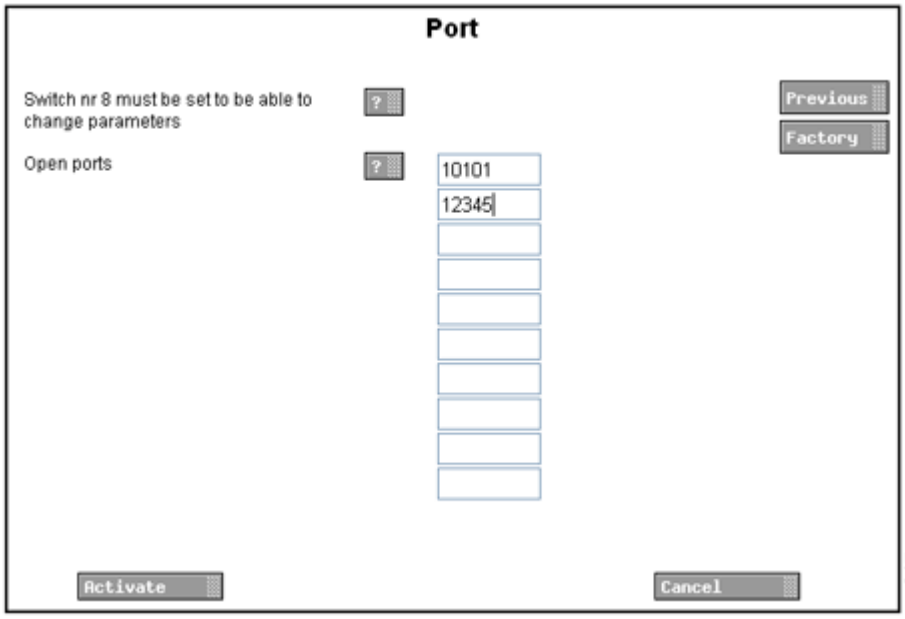
   Require user identification shall be set to **No**.



2. Set up the connection parameters and click **Activate**.

Open ports

1. Click **Edit** for Open Ports in the **Remote Management Server** page to open any additional ports that are needed for configuration tools. To be able to configure ports, section 8 on switch number 3 has to be set to ON.



2. Set up the port parameters and click **Activate**.

Serial port channel

Not applicable.

Language and User Interface

All text shown in the user interface is by default in English but a copy of the language can be translated and imported to AIWS. Several languages can be added. The default English language is not possible to edit or remove. The supplied user interface can also be modified to suit the individual customer requirements concerning functionality.

Basic changes that can be made are:

- Translate or adapt text (refer to Translate/Edit the Language on page 387).
- Hide unused functionality (refer to Change the NetPage User Interface Functionality on page 395).
- Modify the user interface to suit the customer's image (refer to Customize the User Interface (GUI) on page 391).
  - Limit the number of characters included in the message text.
  - Add company logo and/or modify the GUI to suit the customer's image.

Note:

The AIWS user interface only supports the Latin-1 character set.

For the best screen appearance

Windows standard screen settings, using normal font size, are recommended. The recommended screen resolution is 1024 x 768.

How to edit

The code is thoroughly commented to make it easy to understand, and can be edited with a simple text or HTML editor. Basic HTML, Java Script, and CSS knowledge is recommended.

Note:

Do not use an intelligent html editor like Frontpage or Dreamweaver, as it might corrupt the html code.

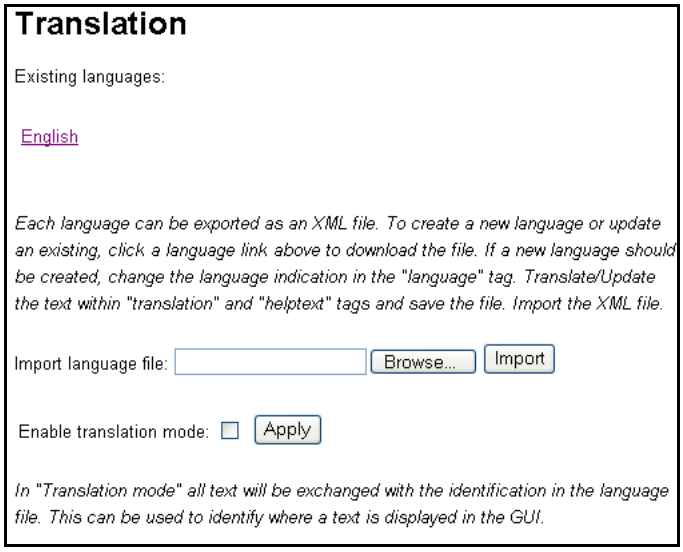
Customize the Language

Note:

There is a difference between *Translation files* (.xml) described in this section and *Language files* (.lng). Translation files are used to change the language to be used in the AIWS. The Language files (.lng) are files that may be imported and uploaded to a device, see description in Import Language files on page 346.

Export a Language for Translation/Editing

1. Click **Configuration** on the start page.
2. Enter ***User name*** and ***Password*** and click **OK**
3. Select **Other Settings > Set language** in the left menu on the **AIWS Configuration** page. The **Set language** page opens.
4. Click the **Import/Export Language** button. The **Translation** page opens.


Translation
Existing languages:
English
Each language can be exported as an XML file. To create a new language or update an existing, click a language link above to download the file. If a new language should be created, change the language indication in the "language" tag. Translate/Update the text within "translation" and "helptext" tags and save the file. Import the XML file.
Import language file:
Browse...
Import
Enable translation mode:
Apply
In "Translation mode" all text will be exchanged with the identification in the language file. This can be used to identify where a text is displayed in the GUI.

5. Click an existing language link to create or update languages. An XML file is generated from the AIWS and a **File download** window opens.
6. Save the file for translation or editing purposes. The file can be saved in any name during the translation.

Translate/Edit the Language

In the downloaded language file, there are numerous tags, but changes should only be made in one tag attribute and two tags:

- <language id=”English”>
  The “id” attribute is the text that appears in the drop-down list. Change **English** to the name of your translated language here.
- <translation>
  Text displayed in menus, on buttons, tabs etc. Translated text can be added inside the tags.
- <helptext>
  On-line help text. Translated text can be added inside the tags

Below is an example of a language file (just showing two buttons with helptext, for simplicity).

Figure 145: Example of a translation file

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<translations>
 <language id="English" type="complete">
  <app id="Alarm Manager">
   <text id="ACTION_TYPE_SELECTOR">
    <translation>Action Type</translation>
    <helptext>Select which type of action to take.</helptext>
   </text>
   <text id="ACTIVATE_EHCONF_OK">
    <translation>Activation of configuration OK.</translation>
   </text>
   <text id="ALARM_TYPE_SELECTOR">
    <translation>Alarm Type</translation>
    <helptext>The alarm type that should be triggered. </helptext>
   </text
  </app>
 </language>
</translations>
```

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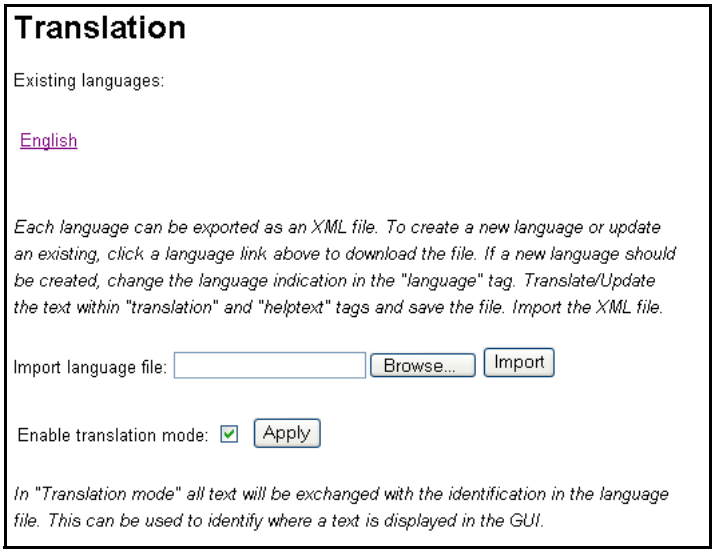
Show Pages in Translation Mode

All texts, buttons, menus etc. are identified with labels (for example TEXT_TRANSLATION_TITLE). With the translation mode function it is possible to view the label for each button, menu etc. This can be helpful when translating the language file. For not losing one´s bearings during the translation it is a help to open two windows and view one of them in translation mode and the other in normal mode.

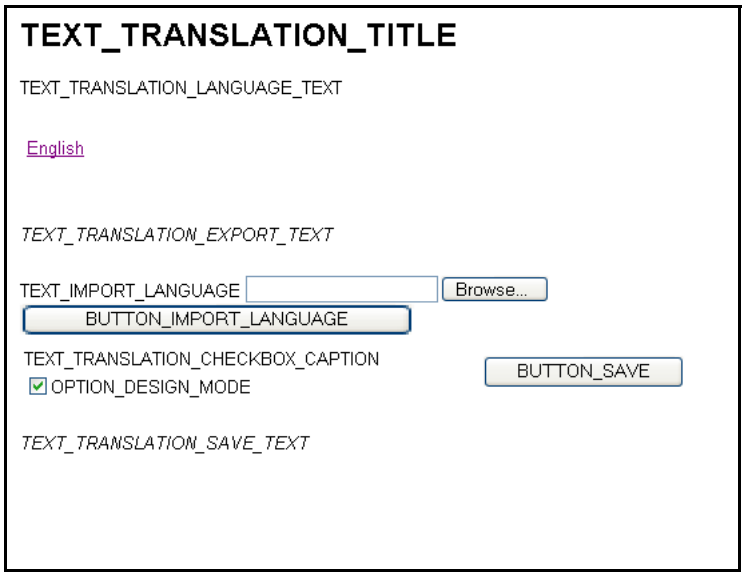
1. Select the **Enable translation mode** check box in the **Import/Export Language** page, and click **Apply**.

Figure 146: Translation page in normal view


Translation
Existing languages:
English
Each language can be exported as an XML file. To create a new language or update an existing, click a language link above to download the file. If a new language should be created, change the language indication in the "language" tag. Translate/Update the text within "translation" and "helptext" tags and save the file. Import the XML file.
Import language file:
Browse...
Import
Enable translation mode:
Apply
In "Translation mode" all text will be exchanged with the identification in the language file. This can be used to identify where a text is displayed in the GUI.

All the labels on the pages are shown, see example below.

Figure 147: Translation page in translation mode



To return to standard view:

2. Clear the **OPTION_DESIGN_MODE** box.
3. Click **BUTTON_SAVE**.

Import Translation files

When the file is translated, it must be imported to the AIWS.

1. On the **AIWS start page**, click on **Configuration**. The **AIWS Configuration** page opens.
2. In the left pane select **Other settings > Set language**. The **Set language** page opens.
3. Click on the **Import/Export Language** button. The **Translation** page opens.
4. Click **Browse** to locate the translated file and click the **Import** button.

The name of the translated language (the language **id** attribute) will appear as a link in the Existing Language list and can be downloaded for editing purposes.

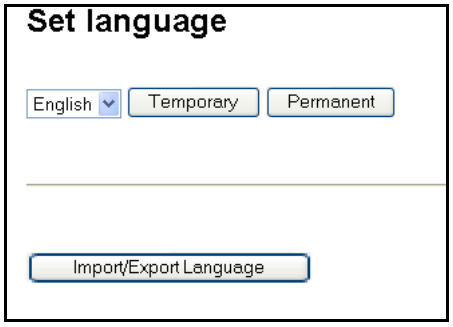
Delete Language

On the **Translation** page, click the **Delete** symbol to the right of the language you want to remove, see below. Note that it is not possible to remove the default language.

Select Language

Translated languages (the language **id** attribute) are shown together with the default language **English** in the language drop-down list in the **Set Language** page.

1. Click **Configuration** on the start page.
2. Enter ***User name*** and ***Password*** and click **OK**
3. Select **Other Settings > Set language** in the left menu on the **AIWS Configuration** page.



4. Select language in the drop-down list and click **Permanent**.

   To change language for this session only, i.e. for this browser window until closed, click **Temporary**.

Customize the User Interface (GUI)

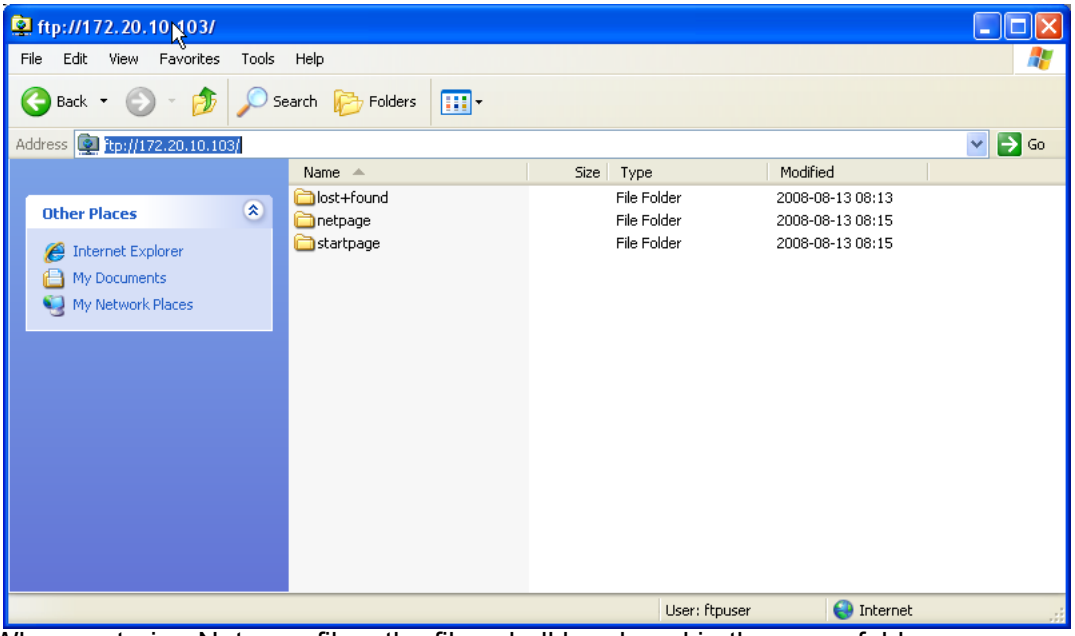
AIWS has 5 Mb disk space on the FTP area and about 1.6 Mb is dedicated for the user interfaces. The free space can be used for storing files and folders, for example, a customized user interface for sending messages.

Files for Translation/Editing

1. Log on to AIWS with an FTP client. When secure mode is enabled, see Web access security settings on page 307, only secure access via HTTPS and FTPES is allowed. HTTP is automatically redirected to HTTPS and FTP access is not allowed. The FileZilla Client freeware (not included) supports FTPES.
2. Log on with **ftpuser**. The default password is **changemetoo**.

   The files located in the Start page and NetPage folders, including GIFs and CSS, can be downloaded/copied to a folder on your hard disc.

Figure 148: Folders on the FTP area



When restoring Netpage files, the files shall be placed in the same folder.

When secure mode is enabled, see Web access security settings on page 307, only secure access via HTTPS and FTPES is allowed. HTTP is automatically redirected to HTTPS and FTP access is not allowed. The FileZilla Client freeware (not included) supports FTPES.

Default User Interfaces

Default Start Page GUI

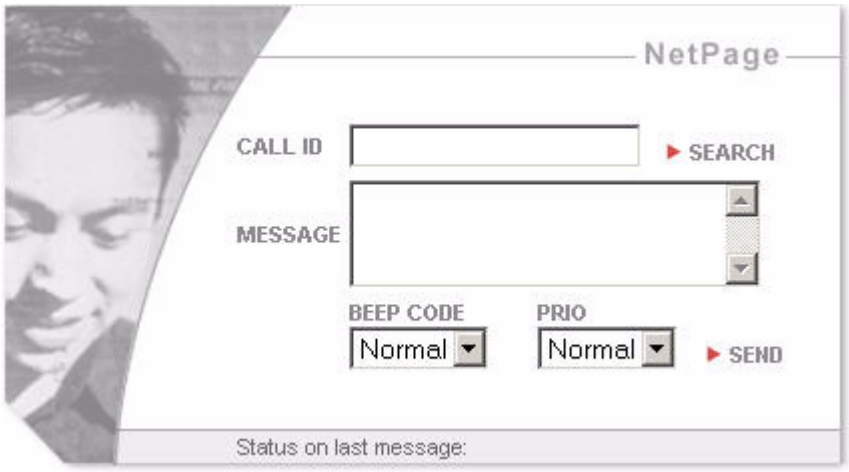
Figure 149: Start page default user interface (index_template)

A copy of the default AIWS Start page, see figure 149 above, is stored in the start page folder on the AIWS FTP area. The start page copy *index_template,* is an html file which can be copied and edited. It is also possible to replace the start page with a completely new user interface.

When the edited or new html file is saved as **`index.html`** and placed in the Start page folder on the AIWS FTP area, it will replace the default start page.

Default Send Message GUI

Figure 150: NetPage default user interface (index3)



The default NetPage user interface **`index3.html`**, see figure 150 above, is opened from the start page by clicking **Send Message**.

In the NetPage folder on the AIWS FTP area there are four examples of the NetPage user interface, *index1*, *index2*, *index3* and *index4*. Index3 is a copy of the default NetPage user interface.

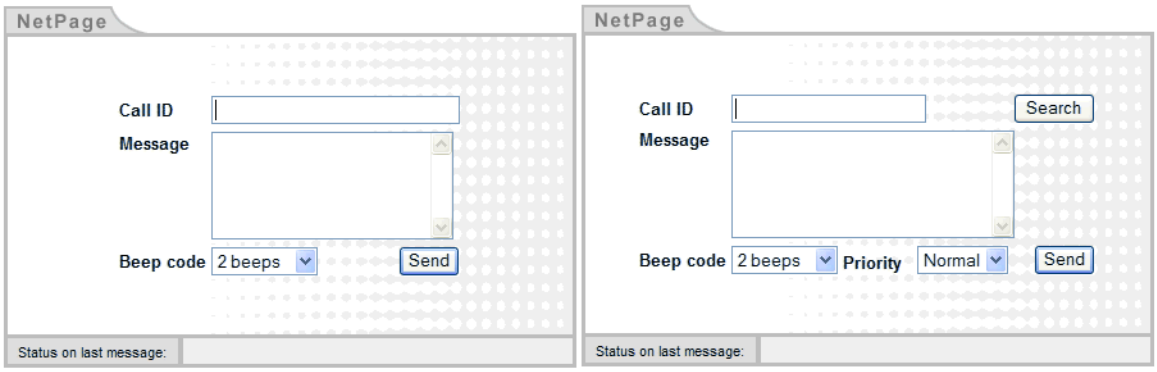
All NetPage functionality is included in the default user interface, but all parameters that can be configured in the example user interfaces index1, index2 and index3, are not shown. The necessary code for viewing and configuring the hidden parameters is included, but they are marked as comments to prevent the browser from interpreting them, see figure 152 and figure 153 on page 396.

The default user interface can be exchanged with one of the example user interfaces, shown in figure 151 on page 394, by saving the html file as **`index.html`** and replacing the existing **`index.html`** file. *index4* is shown in figure 154 on page 398.

Note:

Selecting a predefined message (when using the index4.html interface) will replace the already typed message in the message text.

Figure 151: NetPage user interface examples; index1 and index2



Note:

The JavaScript code in the HTML files is used for interpreting and displaying responses from the messaging system. It is recommended that this code is used unmodified, otherwise, the Message history functionality may be lost. Also, the Java Applets must be left unchanged to preserve the functionality.

Note:

No server side scripts are allowed in the FTP area.

Priority and Beep Codes in the default NetPage User Interface

GUI Description	Priority Code
Low	9
Normal	7
High	3
Alarm[1]	1

1. Marked as hidden in the html page (index.html). To make the alarm priority option available, remove the comment and save the file in the ftp area. When using index4.html, these changes need to be done in several files, see Change the NetPage User Interface Functionality on page 395.

GUI Description	Beep Code
Silent	0
1 beep	1
2 beeps	2
3 beeps	3
4 beeps	4
5 beeps	5
10 beeps	6
Siren	7

Note:

The system does not distinguish between the number of beep codes.

Change the NetPage User Interface Functionality

As a help for locating comments/hidden text in the html code, the comment marks " <!--" and "-->" are used, see the example in figure 152. The comment marks are also used to hide functionality in the user interface. Text written, or functionality, framed by the comment marks is not interpreted by the web browser.

Figure 152: Example of how to mark html text as comments, i.e. hide it

```
<TD valign="top" style="height:25">
  <!-- This is the button that opens the NetPage phonebook.
  If the phonebook is not used, remove the complete script and
  the    line (mark it as comments to be able to
  include it again later on) -->
```

880

For comments included in the JavaScript code, the comment mark "//" is used, see figure 153. Text written after the comment mark (in the same line) is not interpreted by the web browser.

Figure 153: Example on comments in a JavaScript

```
function sendform() {
  addCallNo(document.testform.callno.value, '');
  // If the user forgot to press 'add'
  tmplist = document.testform.callnolist;
```

680

Buttons, for example the **To** button that opens the phonebook, can also be hidden directly in the code. To do this, insert "hidden" (double quotation marks both before and after "hidden") as input type as follows:

`document.write('<input type="button" value="...`

will become

`document.write('<input type="hidden" value="...`

Note:

To change the user interface (index4) it is necessary to open and change one or more of the files: **`send.html`**", **`receive.html`**" and **`admin.html`**".

Note:

If changes to the phonebook access (**To** button), beep codes or priority settings are made, it is also necessary to change the files **`editpagtext.html`** and **`leditpagtext.html`**, to get a consistent user interface.

Note:

In order to be able to restore the default GUI, make a backup before changes. See Backup and Restore of NetPage files on page 408.

Translation of the User Interfaces

The texts presented in the user interfaces can be translated. The translation is entered differently depending on the example user interface that is used. The HTML files *index_template* and *index1, index2* and *index3* are translated in the HTML code. The NetPage user interface (index4) on the other hand is translated in the **`language.js`** and **`receive.html`** file, where receive.html includes the NetPage message history applet. See figure 154 on page 398 for an overview of where the different files are used.

Start Page

1. Download/copy the file and included image from the FTP area, refer to Files for Translation/Editing on page 391.
2. Open the file in a text or HTML editor and translate all words.
3. Save the file.
4. Upload/paste the file to the FTP area, refer to Upload the Files to the AIWS FTP Area on page 399.
5. Check that the user interface looks all right.

Example User Interfaces index1, index2 or index3

1. Download/copy the file and included images from the FTP area, refer to Files for Translation/Editing on page 391.
2. Open the file in a text or HTML editor and translate all words and "immediate status" texts. For existing "immediate status" texts, see table below.
3. Save the file.
4. Upload/paste the file to the FTP area, refer to Upload the Files to the AIWS FTP Area on page 399.
5. Check that the user interface looks all right.

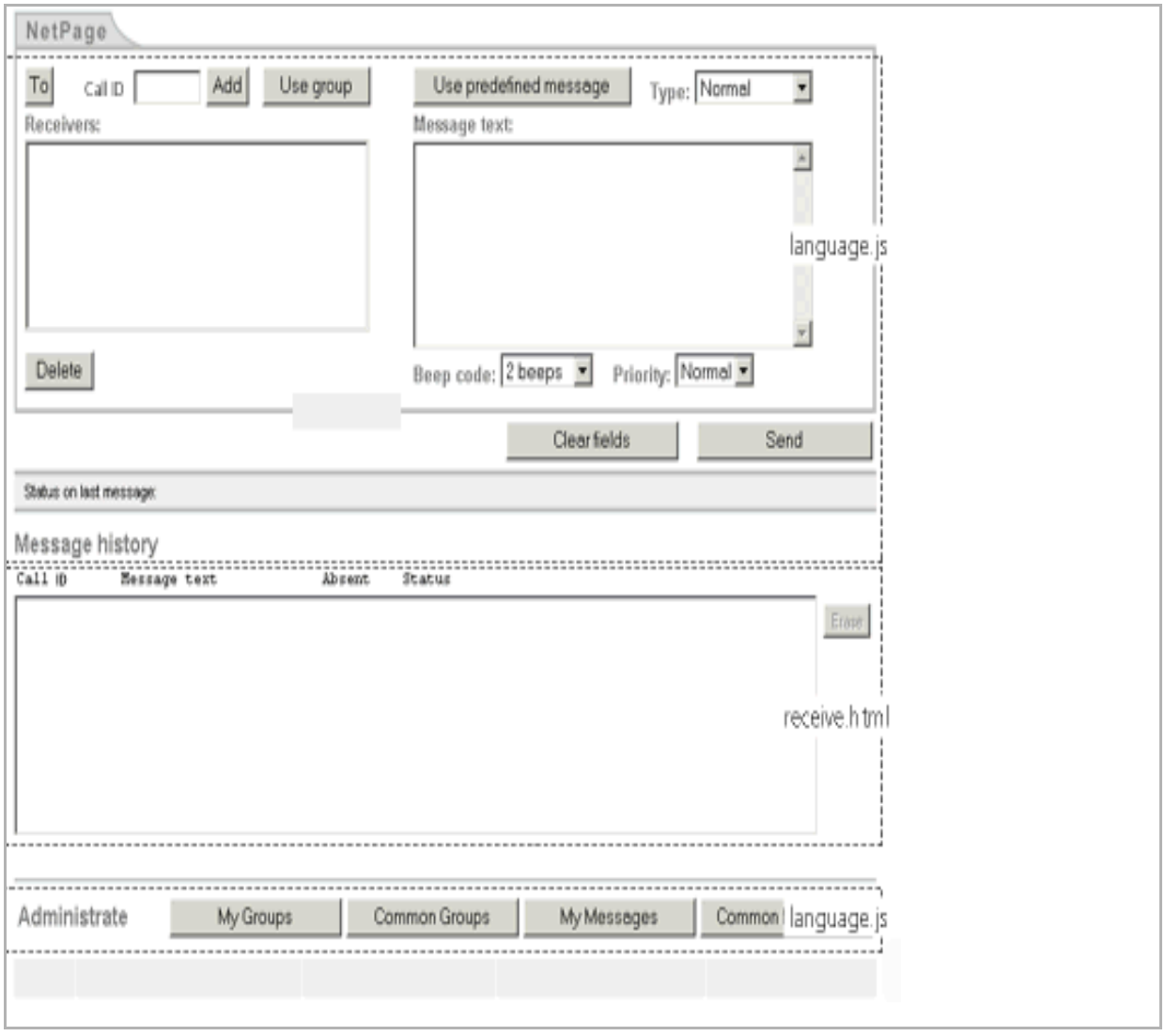
The following "immediate status" texts must be translated. Exchange the English text with your translation. Keep the code (20, 30 etc.) unchanged.

20	Message accepted
30	Memory full in message service
31	Message deleted due to time-out
40	Message not sent, invalid Call ID
nst	Message not sent
nlc	Message cancelled, no licence
sto	Status time-out from message service
sns	Can’t receive status

nan	Message cancelled, no Call ID
oor	Call ID(s) out of number range
	Unknown returncode, confused!

Example GUI index4

Figure 154: Files used for translation of the user interface (index4)



Text which needs to be translated, is found in two different files. Translation of texts in the user interface (including text in Administrate pages, but excluding text in the Java Applet) are found in the **language.js** file. Translation of the Java Applet (Message history field) is found in the **receive.html** file.

1. Download/copy the files **language.js** and **receive.html** from the FTP area, refer to Files for Translation/Editing on page 391.
2. Open the **language.js** file in a text editor, for example Wordpad.
   a. Add the translation inside the quotation marks after the English text, see example below:

      `"Add Group", " "` will become `"Add Group", "Your translation".`

   b. Save the file.
3. Open the **receive.html** file in a text editor, for example Wordpad.
   a. Add the translation inside the quotation marks after the English text, see example below:

      `PARAM NAME="English text" VALUE="Your translation".`

   b. Save the file.
4. Upload/paste the files to the FTP area, refer to Upload the Files to the AIWS FTP Area on page 399.
5. Refresh the page and check the result. All buttons except the Administration buttons will expand/decrease when the text is translated. The width of the Administration buttons is fixed but can be altered in the HTML file **admin.html**.

Upload the Files to the AIWS FTP Area

Upload/paste all updated AIWS files (including GIFs and CSS) to the AIWS FTP area.

1. Log on to AIWS with an FTP client. When secure mode is enabled, see Web access security settings on page 307, only secure access via HTTPS and FTPES is allowed. HTTP is automatically redirected to HTTPS and FTP access is not allowed. The FileZilla Client freeware (not included) supports FTPES. Log on with "**ftpuser**". The default password is "**changemetoo**".
2. Copy the files and paste them into the FTP area.

   When secure mode is enabled, see Web access security settings on page 307, only secure access via HTTPS and FTPES is allowed. HTTP is automatically redirected to HTTPS and FTP access is not allowed. The FileZilla Client freeware (not included) supports FTPES.

Inserting a Company Logotype

In the default GUI, a company logotype can be inserted, for example, in a separate table above the NetPage application.

In the examples index1, index2 and index3, the company logotype can be inserted in any of the empty table cells of the NetPage application.

Password Protected Access to NetPage

If access to NetPage has to be password protected, do as follows:

1. Log on to AIWS with an FTP client. When secure mode is enabled, see Web access security settings on page 307, only secure access via HTTPS and FTPES is allowed. HTTP is automatically redirected to HTTPS and FTP access is not allowed. The FileZilla Client freeware (not included) supports FTPES. Log on with "**ftpuser**". The default password is "**changemetoo**".
2. Change the name of the file **`htaccess`** to **`.htaccess`** (a point is added in front of the name).

With this modification, one has to log on with the user name "**user**" to get access to NetPage. The default password is "**password**".

When secure mode is enabled, see Web access security settings on page 307, only secure access via HTTPS and FTPES is allowed. HTTP is automatically redirected to HTTPS and FTP access is not allowed. The FileZilla Client freeware (not included) supports FTPES.

Accessing NetPage from a Cordless Unit with WAP

NetPage can be accessed from a cordless unit that supports WAP. Two WML pages for this purpose are included in NetPage. The page that is accessed is called **`send.wml`** and the response is shown on **`receive.wml`**.

The included WAP application enables specifying a Call ID and a message text. When the message has been sent the receive page is opened and the send status is shown. The send application is accessible from the receive page in case another message should be sent.

Note:

If the cordless unit uses WAP version earlier than 2.0 it has to be stated that the message is UTF8 encoded. See *UTF8 encoded on page 401* for more information.

UTF8 encoded

When NetPage is accessed from a cordless unit that uses WAP version earlier than 2.0, the message that is sent will be UTF8 encoded. The parameter "utf8" then has to be included to indicate this for the CGI script in NetPage. The parameter "utf8" has to be given a value but the value has no meaning, i.e. it can be any value.

Test the New User Interface

It is recommended to test the customized user interface as follows, for example:

- If a company logotype is added, check that it looks all right and that AIWS opens quickly. If AIWS opens slowly, minimize the picture file size and save it as "interlaced" to decrease wait time for the image.
- Check that all text is correctly translated.
- Check that the phonebook opens and that the entries are correct.
- Send a message.
- Check that the **message history status** is received and displayed.

Update the User Interface after a new AIWS Release

When a new version of the AIWS is released, there might be changes in the user interface that need to be translated.

1. Import your old translated file to the new AIWS software version. New text and buttons in the user interface are shown in English.
2. Click the language file link and save it.
3. Open the file. All tags that are not translated are marked with the comment:
   <!-- The text identifier below couldn't be translated -->
4. Translate the new text and import the translated file again.

Messaging Tool Configuration

Depending on AIWS item (see Items on page 290), different tools for messaging are displayed:

- Messaging Tool - for AIWSs without NetPage
- NetPage - for AIWSs with NetPage

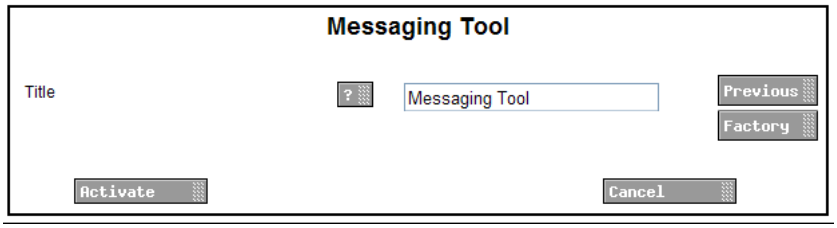
Operation of the Messaging Tool is described in Operation - Messaging on page 314.

Messaging Tool Configuration

It is possible to change the title of the Messaging Tool webpage.

1. Click "**Configuration**" on the start page. The **AIWS Configuration** page appears.
2. Select **Other Settings** > **Advanced Configuration** in the left menu on **AIWS Configuration** page. The **AIWS Advanced Configuration** page appears.
3. In the left pane, click **Messaging Tool**. The **Messaging Tool** page appears.

Figure 155: The Messaging Tool page.



4. Enter text to be shown as the title. Click **Activate**.

NetPage Configuration

Configure NetPage messaging

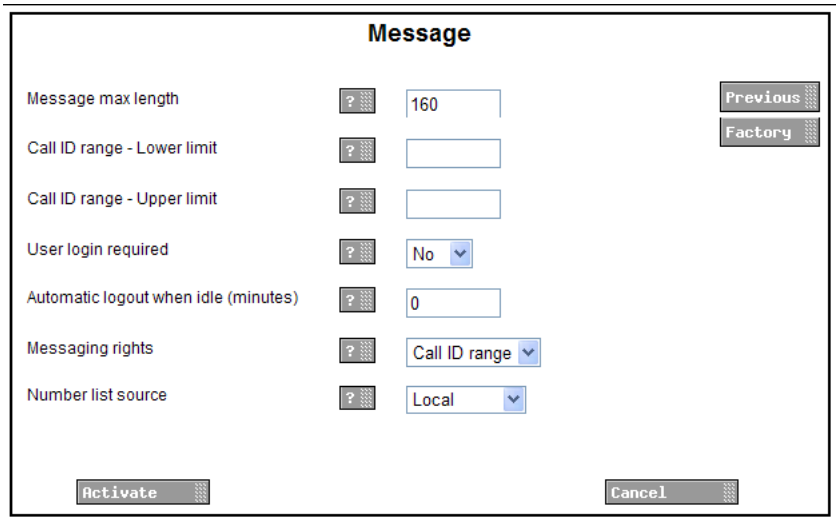
The following settings are applicable for NetPage web messaging.

To set messaging properties:

1. Click **Configuration** on the start page. The **AIWS Configuration** page appears.
2. Select **Other Settings** > **Advanced Configuration** in the left menu on **AIWS Configuration** page. The **AIWS Advanced Configuration** page appears.

3. Select **Web Messaging** in the left menu. The **Message** page appears.

Figure 156: The Message configuration page.



4. Enter values for messaging.
5. Click **Activate**.

The following parameter can be set:

- Message max length.
  Sets the maximum number of characters that can be forwarded to a unit. Messages longer than the set value are truncated.
- Call ID range - Lower limit
  Sets the lower limit of a Call ID range. Messages sent to Call IDs out of this range are cancelled. An empty field means no lower limit.
- Call ID range - Upper limit
  Sets the upper limit of a Call ID range. Messages sent to Call IDs out of this range are cancelled. An empty field means no upper limit.

  Note:

  If an upper and/or lower limit for the Call ID range is set messages using an Alias / Call ID will not be sent anymore. The Alias value will not pass the limit check in this case.
- User login required (No or Yes)
  Sets whether a login is required for NetPage. If an ESS module is used as "User Server", users configured in the ESS can also log in. This parameter shall be set to no for the default GUI (index3). If index4 is used, the Message History section must be included. Refer to Customize the User Interface (GUI) on page 391.

- Automatic logout when idle (minutes)
  Sets how long a user can be idle before being logged out. To prevent automatic logout, leave this field empty. If the parameter **User login required** is set to **No**, leave this field empty.
- Messaging rights. Choose between Call ID range and User rights to determine how NetPage shall verify Call IDs.
  Call ID range means that Call IDs are verified according to the Call ID range limit settings. This setting shall always be used for systems without Ascom Enhanced System Service (ESS) module.
  User rights means that Call IDs are verified according to the settings in the ESS. This requires that the parameter **User login required** is set to **Yes**.
- Number list source. Choose between Local and ESS users.
  This is the Number list that is used in NetPage. In systems without an ESS, this parameter shall always be set to **Local**.

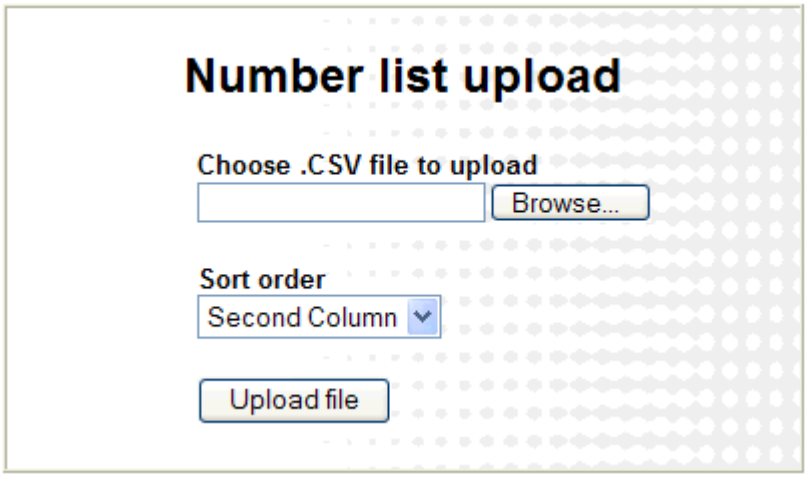
Creating or Updating the Number list

In the NetPage default GUI (index.html), a number list can be accessed by clicking the **Search** button. Before the number list can be used, the entries have to be added.

The number list entries can be created from any CSV file, using Microsoft Excel or any leading spreadsheet or relational database application.

The CSV file is uploaded/pasted with the **Number list upload** program (included in NetPage) as described below.

Figure 157: The page for uploading a new or updated CSV file.



1. Create a CSV file with the following format:

   First name 1;Surname 1;Phone number 1

   First name 2;Surname 2;Phone number 2

2. Open the page: http://xxx.xxx.xxx.xxx/admin/user/uploadnrlist.html.
   Log on with "user**"**. The default password is "password".
   The application shown in figure 157 will appear.
3. Browse to find the CSV file. Choose the sort order. Click on **Upload file**.

   When the CSV file is uploaded, it will be converted and saved as **`uploadednrlist.js`**. The file is a text file with the following format:

   nr_array=[[“First name 1”,”Surname 1”,”Phone number 1”],[“First name 2”, ”Surname 2”,”Phone number 2”]];

   If you later want to edit the number list, the **`uploadednrlist.js`** file is accessible with the ftp client and can also be modified manually.
4. Test that the number list works as desired.
5. Make a backup of the **`uploadednrlist.js`** file, see further in Backup and Restore of NetPage files on page 408.

Note:

When the number list has been updated, be sure to clean the cache memory on the web browser.

Predefined Groups

Note:

My Groups are created from the NetPage and are not to be mistaken for the groups created from the Configuration page in AIWS. This functionality is only accessible from index4, see figure 154 on page 398.

Common Groups

Common Groups can be used by all NetPage users. It is possible to create up to 30 predefined **Common Groups** with up to 50 Call IDs in each. These groups are stored on the FTP area.

My Groups

My Groups are stored locally and can only be accessed or changed from the PC where they are stored.

There is a limited storage area. This means that, for groups with approximately 20 characters (name and Call ID), the following applies:

Amount of Groups	Group Members
10	19
15	7
20	2

Create Groups in My Groups

1. Click **My groups** button in NetPage.
2. Click **Add group**.
3. Enter a name for the group in the **Name** text field.
4. Click the **To** button and select users (from the phonebook) to be members of this group or enter number in the Call ID text field and click **Add**.
5. Click **Save**.
6. Click **Close** to exit the administration.

Editing Groups

1. Click **My groups** button in NetPage.
2. Select the groups that should be changed and the administration field will open.
3. Make changes and click **Save**.
4. Click **Close** to exit the administration.

Predefined Messages

Note:

This feature can only be reached from *index4*.

The predefined messages include message text, beep characteristics, priority and message type. There are two types of messages: “Common Messages” and “My Messages”.

Note:

The maximum message length differs depending on which system or telephone the message is sent to and the amount of special characters included in the message.

Common Messages

Common Messages can be used by all NetPage users. Up to 30 “Common Messages” can be created. These messages are stored on AIWS and can only be changed by authorized persons.

My Messages

Up to 30 predefined “My Messages” with 120 characters per message can be created. It is also possible to have fewer “My Messages” containing more characters. These messages are stored locally and can only be accessed or changed from that PC.

Create a Predefined Message

1. Click the **Common Messages** or **My Messages** button in **NetPage**. For **Common Messages** enter the user name “user” and the password “password”.
2. Click **Add message**. There is always a blank line at the column end.
3. Enter the name of the message and add a message text of maximum 250 characters.
4. Set the message type, beep code and priority.
5. Click **Save**.
6. Click **Close** to exit the administration.

Edit a Predefined Message

1. Click the **Common Messages** or **My Messages** button in **NetPage**. For **Common Messages** enter the user name “user” and the password “password”.
2. Select the messages that shall be changed and the administration field will open.
3. Make the changes and click **Save**.
4. Click **Close** to exit the administration.

Message History Status

Status on the last sent message:

Status	Description
Message accepted	The message is accepted by NetPage and will be transmitted.
Message completed	The Messaging System has completed the transmission of the message.

In the user interface (index4), other **message history statuses** can appear such as:

- Call Diversion
- Manual Acknowledge
- Delivery Receipt

Note:
Deleting a message in message history will delete the received message on the telephone as well.

Backup and Restore of NetPage files

It is recommended to make a backup of all NetPage files, the phonebook and predefined groups and messages. This is useful, for example, when recovering a customised GUI in case of software or hardware replacements. Even after a software update the NetPage files need to be restored.

NetPage Files

NetPage files are the phonebook, the GUI files including image files and the Common Groups and the Common Messages files.

Backup

Copy and save all NetPage directory files in the NetPage ftp area, see Files for Translation/ Editing on page 391.

Restore

1. Put copies of all of the backup NetPage directory files in the NetPage ftp area, see Files for Translation/Editing on page 391.
2. Test that NetPage is functioning properly, see Test the New User Interface on page 401.

Predefined Groups and Messages

Note:
This functionality can only be reached from index4, see figure 154 on page 398.

Backup

1. Open NetPage. In the Administrate field, select the **My Groups** button. Click on the **Backup/ Restore** button. The **Backup/ Restore** view is opened. Click **Backup** > **Save**. Choose the file name and save.
2. If not already done, repeat the same process as above in point 1) but for **Common Groups**. (Log on with "user" and password "password".)

3. Repeat the same process as above in point 1) but for **My Messages**
4. If not already done, repeat the same process as above in point 1) but for **Common Messages**. (Log on with "user" and password "password".)

Restore

1. Open NetPage. In the Administrate field select the **My Groups** button. Click on the **Backup/ Restore** button. In the **Backup/ Restore** view click **Browse...** and browse to the once backed-up file. Click **Open** > **Restore**.
2. If not already done, repeat the same process as above in point 1) but for **Common Groups**. (Log on with "user" and password "password".)
3. Repeat the same process as above in point 1) but for **My Messages**
4. If not already done, repeat the same process as above in point 1) but for **Common Messages**. (Log on with "user" and password "password".)
5. Test that NetPage is functioning properly, see Test the New User Interface on page 401.

Open Access Protocol (OAP)

This function makes it possible for customer applications to communicate with other connected systems, for example the Cordless Telephone System. The protocol that is used for communication is called Open Access Protocol (OAP).

For more information, e. g. a Function Description please contact your system administrator.

Configuration

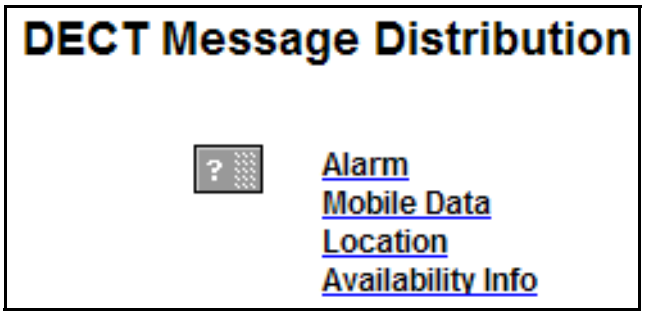
The Message Distribution lists for the different interfaces have to be configured to send the information to the OAP Server, in order to give the client access to the information. The address of the OAP Server is xxx.xxx.xxx.xxx/OAP.

Configuration Example

The DECT Interface should be configured to send User Data to the OAP Server.

1. Open the AIWS Configuration pages and select **Other Settings > Advanced Configuration**. Under DECT Interface, select **Message Distribution**.
2. Click on **Alarm**, see figure 158 on page 410.

Figure 158: Setting up the Message Distribution list for the DECT Interface to send information to the OAP Server



3. Enter the address 127.0.0.1/OAP in one of the address fields. Click on the **Activate** button.

Troubleshooting

See Avaya In-Building Wireless Server (AIWS) on page 511.

Getting Started

This appendix contains a copy of the printed leaflet included in delivery.

Figure 159: Getting Started leaflet (page 1 of 2)

Getting Started

These instructions will help you getting started and to access this product. Once logged in, a setup wizard will help you with the basic configuration.

Supply voltage: 12 – 24 V/DC ±10%
Current consumption: max 0.4 A at 12 V
max 0.2 A at 24 V

Note: Refer to reverse side for figures and information about connections, cables, switches, etc.

Accessing the Product

The web browser Internet Explorer 6.0™ or later is used for accessing the product´s user interface. The product can be assigned an IP address from a DHCP server but the IP address can also be set manually.

Network with a DHCP Server

It is required that this product always gets the same IP address, to prevent it from losing contact with other equipment after a restart. Inform the network administrator about the MAC address and ask him to reserve a fixed IP address via DHCP for this product.

1 Set all sections on switches SW2 and SW3 to OFF, refer to *Figure 4*.

2 Connect this product to the LAN **and** to the power supply as shown in *Figure 1*.

Wait until the function indicator shows the status *License error (*refer to *Figure 2*).

3 Open the web browser and enter the address "elise-xxxxx", where xxxxx is the module key number (starting zeros in the number can be excluded). The module key number can be found on the enclosed licence certificate. The number can also be found on the circuit board, refer to *Figure 3*.

Network without a DHCP Server

1 Set section one (1) on switch SW3 to ON (all other sections to OFF) and all sections on switch SW2 to OFF, refer to *Figure 4*.

2 Connect the Ethernet connector (shown in *Figure 1*) to the PC or LAN with appropriate cable.

- Cross-over cable if connected directly to the PC
- Ordinary cable (straight through pinouts) if connected over the LAN

3 Connect the power supply to this product as shown in *Figure 1*.

4 When the function indicator shows the status *Network Setup mode,* set all sections on switch SW3 to OFF. Refer to *Figure 2* and *3*.

The configuration IP address "192.5.36.229" must be added to the PC´s routing table to be able to access this product (requires administrator rights on the PC). Follow the instructions in steps 5 and 6 below.

5 Open a command prompt.

Note: In Windows Vista, you need to run the command prompt as PC administrator to be authorized to change the routing table.

6 Enter the following command: "**route ADD 192.5.36.229 MASK 255.255.255.255 xxx.xxx.xxx.xxx**", where xxx.xxx.xxx.xxx is the PC´s IP address.

7 Open the web browser and enter the address "192.5.36.229/config".

Configuration

The setup wizard will start automatically when this product is accessed from the web browser.

1 Enter user name "admin" and the password "changeme".

2 Run the wizard.

(If the IP address has not been assigned by an DHCP server, it must be set manually in the wizard).

Note: Refer to the Installation and Operation Manual for this product, for extended configuration.

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Figure 160: Getting Started leaflet (page 2 of 2)

Connections
Figure 1 shows the placement of the connectors used for the startup of the product.

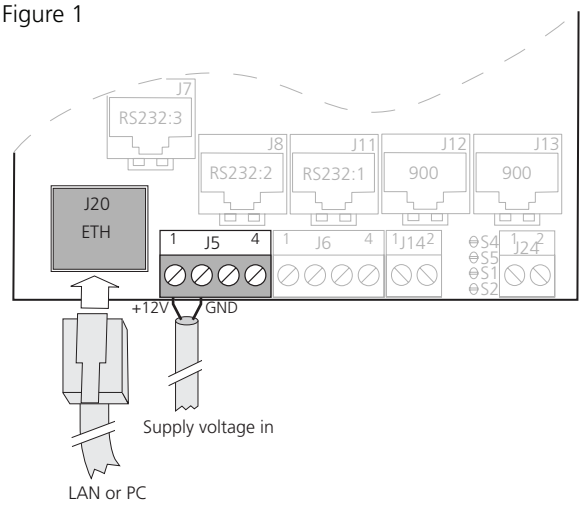
J5 Connection of supply voltage.

J20 For connection of 10baseT or 100baseT Ethernet TCP/IP network.

Cables
Ethernet cable:

- Use a cross-over cable if connected directly to a PC
- Use an ordinary cable (straight through pinouts) if connected to the LAN

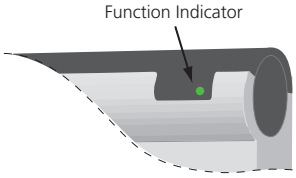
Figure 1



Function indicator
Figure 2 shows the function indicator and different status.

Note: If a DECT Exchange is selected in the wizard as wireless phone system but not yet connected, the *Starting up* status will be indicated until connected.

Figure 2

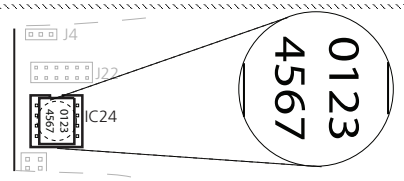


Colour	*LED Indication*	*Status*
Green		OK. Running
Orange		Network setup mode
Orange		Starting up[1]
Orange		Power up Restart
Red		Licence error
	Each segment = 100 ms	

[1] Starting up mode is indicated during start of applications or if an application has lost connection to a required resource, for example DECT Exchange

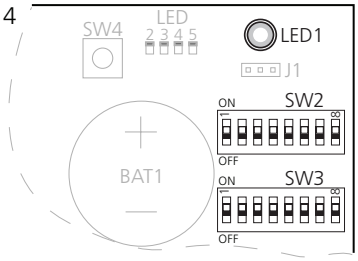
Module key number
Figure 3 shows where to find the module key number on IC24.

Figure 3



Operation switches SW2 and SW3
Figure 4 shows the placement of SW2 and SW3 and ON/OFF positions.

Figure 4



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Device Manager Keyboard Shortcuts

The following table shows the shortcuts that can be used in the Device Manager.

General

Shortcut	Description
Ctrl + H	Open the File handling dialogue.
Ctrl + Tab	Switch tab
Alt + F4	Close the application

Devices

Shortcut	Description
Ctrl + N	Add a new device
Enter	Upgrade the selected device(s)
Delete	Delete the selected device(s)
Ctrl + F	Find a device

Numbers

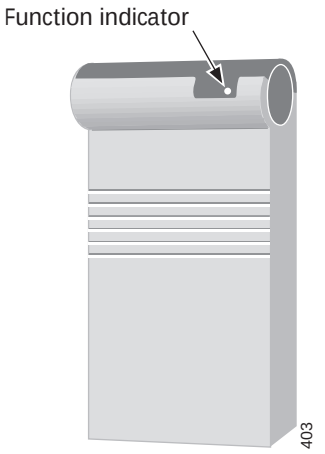
Shortcut	Description
Ctrl + N	Add a new Number
Enter	Edit the selected Number
Ctrl + C	Copy the selected Number
F2	Rename the selected Number
Ctrl + S	Save the selected Number to the database
Delete	Delete the selected Number from the database
Ctrl + F	Find a Number

Templates

Shortcut	Description
Ctrl + N	Add a new template
Enter	Edit the selected template
Ctrl + C	Copy the selected template
F2	Rename the selected template
Delete	Delete the selected template
Ctrl + F	Find a template

Function Indicator and Error Relay Output

Figure 161: The function indicator that indicates the status of the AIWS



The function indicator and the error relay indicate the status of the AIWS. The indication is dependent of whether the AIWS is connected to the A-bus or not and also whether there is a Central Unit connected to the A-bus. Which mode the AIWS uses is set on the AIWS administration pages. The function indicator and error relay indications are described below.

AIWS connected to A-bus with Central Unit

Status	Function Indicator	Error Relay
Communication with the Cordless Telephone System and the Central Unit.	Green	Operates
Communication with the Cordless Telephone System but not with the Central Unit. or Communication with the Central Unit but not with the Cordless Telephone System.	Flashing orange (100ms ON/100 ms OFF)	Released
Shut down	Flashing red (1000ms ON/3000 ms OFF)	Released
Restart or reboot	Flashing orange (100ms ON/800 ms OFF)	Released

AIWS connected to A-bus without Central Unit or A-bus not connected

Status	Function Indicator	Error Relay
Communication with the Cordless Telephone System. A-bus connection does not change the indication.	Green	Operates
No communication with the Cordless Telephone System.		
Shut down	Flashing red (1000ms ON/3000 ms OFF)	Released
Restart or reboot	Flashing orange (100ms ON/800 ms OFF)	Released

For information about other LED indications, see Installing Elise 2 Server (AIWS Hardware) on page 421.

File types

In this appendix, the different file extensions that are used in PDM and AIWS are explained. System files are not described.

File type	Extension	Description
Software file (devices)	bin	Software for devices
Phonebook file	cpb	Company Phonebook file for portable devices. Not used by PDM.
Parameter Definition file	def	Including all possible settings for a certain device type for a certain version.
Software file (AIWS)	eas	Used for package upgrade of AIWS. Not used by PDM.
Image file	img	Used for complete (image) upgrade of AIWS. Not used by PDM.
Language file	lng	Language file for portable devices.
Package file	pkg	Archive that can include different file types such as parameter definition files (.def), software files (.bin) and template files (.tpl).

Site file	ste	Storage for site specific data. These files may not be edited manually. Used only by PDM.
Template file	tpl	Contains one or more exported templates.
Number file	xcp	Exported Numbers.
Translation file	xml	eXtensible Markup Language. Language file for PDM and AIWS

Installing Elise 2 Server (AIWS Hardware)

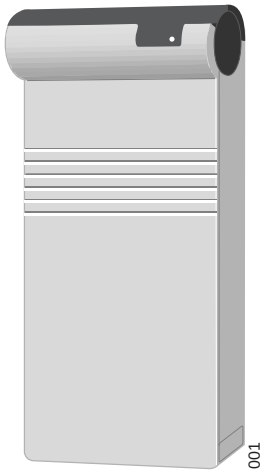
Introduction

The Elise 2 Server (AIWS Hardware) (AIW hardware) can be used as a platform for a wide range of applications. It can be used as an interface between systems, for example a TCP/IP network and the System 900.

The licence is application dependent and therefore described in the application documentation.

The parameter setup of Elise 2 Server (AIWS Hardware) is done with a web browser.

Figure 162: The Elise 2 Server (AIWS Hardware)



Supply voltage:	12 – 24 V/DC ±10%
Current consumption:	max 0.4 A at 12 V max 0.2 A at 24 V
Delivery includes:	Elise 2 Server (AIWS Hardware)
	System Bus Cabling
	Ethernet cable
Tools etc. required:	Screwdriver
	Cutting pliers
	Screws for installation

	Multimeter
	Power supply
	PC with Microsoft Internet Explorer 5.5 or later
	Software "Route to ELISE". (Available from the distributor)

FCC Compliance Statements for Class A Digital Device

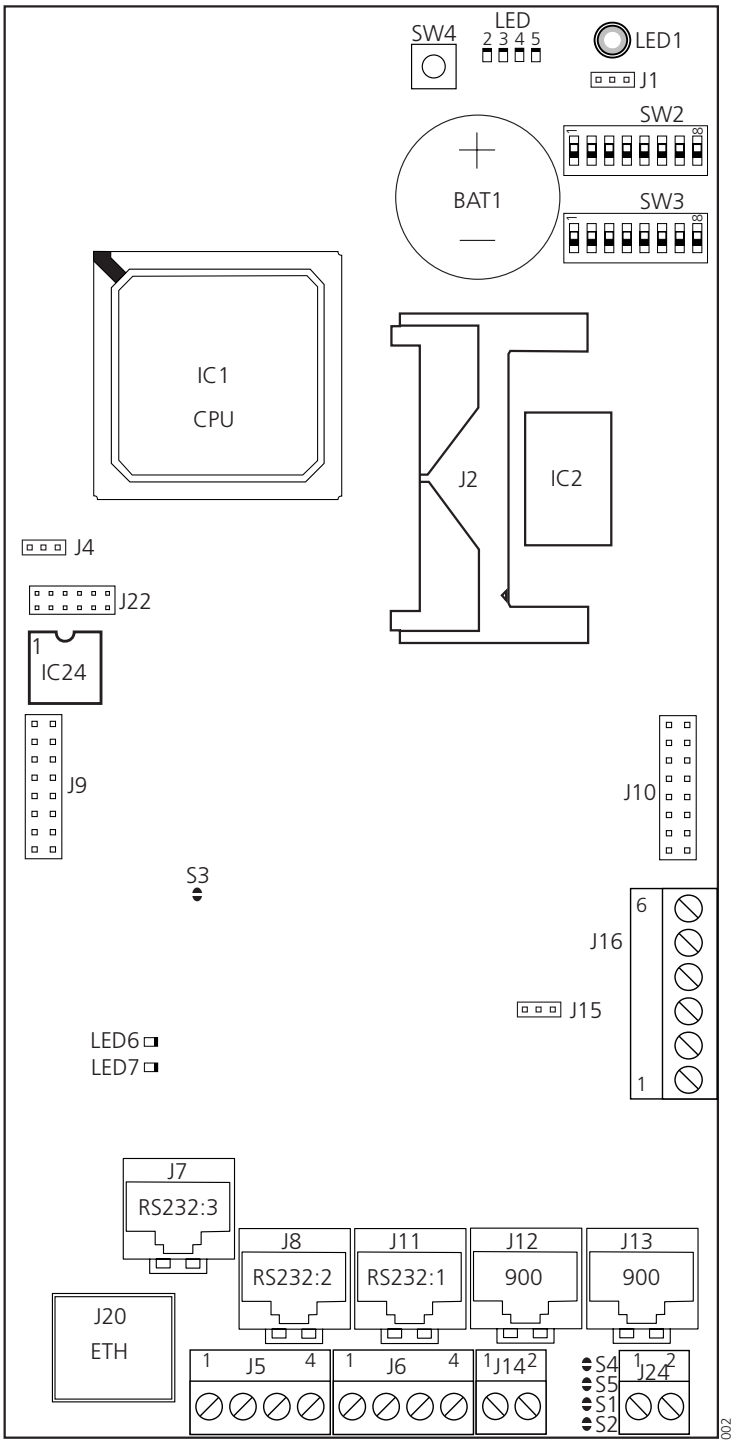
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

EU Compliance Statements for Class A Device

This is a limit-class A device. This device can cause radio interference in residential areas, in which case the owner may be required to undertake appropriate countermeasures.

Board Description

Figure 163: The Elise 2 Server (AIWS Hardware) circuit board.



Connectors

J2	Connector for the Compact Flash
J5	Connection of supply voltage
J6	For connection of RS422 communication
J7	Modular jack (RJ45) for connection of RS232 communication. RS232:3
J8	Modular jack (RJ45) for connection of RS232 communication. RS232:2
J9, J10	LON/GP Interface Connector
J11	Modular jack (RJ45) for connection of RS232 communication. RS232:1
J12, J13	Modular jacks (RJ45) for connection of System 900 bus cabling
J14	Connector where an error relay output is available.
J16	Connects AUX Input and AUX Output
J20	For connection of 10baseT or 100baseT Ethernet TCP/IP network
J22	For internal use only
J24	For connection of A or B-bus from System 900 when modular system bus cable is not used.

Jumper points and push buttons

J1	Jumper that activates the backup battery. (Jumper pin 2-3 to activate).
J4	For grounding and production test
J15	Jumper that determines if the Error relay output should be active when the relay operates or is released. Normally set to 1-2 to select operating.
S1, S2	Jumper points for selection of A or B-bus
S3	For internal use only
S4, S5	Jumper points used when Elise 2 Server (AIWS Hardware) controls the communication on the A/B-bus.
SW4	Reset button for CPU

Switches

SW2	Module address selector switch for A or B-bus. If the setting of SW2 is changed, the Elise 2 Server (AIWS Hardware) detects this automatically and will reconnect to the System 900 with the new address (it takes approximately 30 s).
SW3	Selector switch for operating mode

Module key and Backup battery

IC1	CPU

IC2	On-board flash memory (used for software reboot)
IC24	Module key
BAT1	Backup battery
LEDs	
LED1	Function indicator with green, orange and red indication
LED2-LED5	Application dependent functionality. See documentation on the application for description.
LED6	Communication on the Ethernet
LED7	Ethernet speed indicator. ON 100 MBit/s, OFF 10 MBit/s

General Information

Licence

All Elise 2 Server (AIWS Hardware) units must have a valid software licence.

The licence can be found on the administration web page, under the section System Setup > Common > Licence.

Important:
Changing this field may seriously affect the functionality.

If no valid licence is present, the unit will not start and the Function Indicator (see figure 165) will indicate licence error with a slow flashing red light. The unit can be started in unlicensed mode, see Unlicensed Mode on page 427 and Selection of Operating Mode on page 427 for more information. Unlicensed mode is indicated by the Function Indicator with an orange light (3000 ms ON/100 ms OFF), see also Function Indicator *on page 428*.

Power Down and Restart of Elise 2 Server (AIWS Hardware)

Power Down

1. Remove the cover from the Elise 2 Server (AIWS Hardware).
2. Press the push button SW4 to perform a shut down of the processor.
3. Wait until the Function Indicator is flashing orange.

4. Remove the power cable. The power must be removed within 10 minutes or Elise 2 Server (AIWS Hardware) will restart. If Elise 2 Server (AIWS Hardware) restarts, wait until the Function Indicator is not indicating starting up (flashing orange) before pressing SW4 again.

Restart

There are two ways to restart an Elise 2 Server (AIWS Hardware):

- following the power down instruction above, and then apply the power again, or
- initiate a restart from the administration web page.

Operating Modes

There are five different operating modes; normal, network setup, fail-safe, image installation and unlicensed.

Network Setup Mode

To be able to contact the Elise 2 Server (AIWS Hardware), a valid and unique IP address is necessary. In this mode, the IP address is set to 192.5.36.229, which is reserved for installation of Elise 2 Server (AIWS Hardware). Network Setup Mode should only be used when Elise 2 Server (AIWS Hardware) has not got any IP address or when the IP address has to be changed, i.e. if Elise 2 Server (AIWS Hardware) has been moved from one network to another.

Fail-safe Mode

This mode can be used when it is impossible to contact the Elise 2 Server (AIWS Hardware). When started in Fail-safe Mode, no applications are started. It is possible to return to factory settings or a backup copy of parameters from the web page xxx.xxx.xxx.xxx/admin (xxx.xxx.xxx.xxx is the IP address given to the Elise 2 Server (AIWS Hardware)). If there is a problem accessing this page, it is possible to access xxx.xxx.xxx.xxx/system, where it is possible to change network parameters or install new software.

Image Installation Mode

The Compact Flash includes the Elise 2 Server (AIWS Hardware) operating system and application software. If all information (operating system and application software) needs to be updated, then the complete Compact Flash image must to be replaced. The Elise 2 Server (AIWS Hardware) is normally set in image installation mode from the administration pages but it can also be set by the operating mode switch. See Replacing an Image on the Compact Flash on page 450 or Installing an Image on an empty Compact Flash on page 451.

If the Compact Flash needs to be partly updated with new application software, the image installation mode should *not* be used. For more information, see Updating Application Software on page 449.

Unlicensed Mode

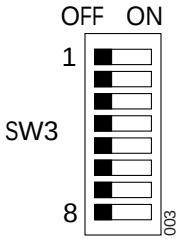
It is possible to run the Elise 2 Server (AIWS Hardware), with full functionality for two hours, without a licence. Exact functionality is application dependent. For more information about the functionality during unlicensed mode, see the application documentation.

In unlicensed mode, it is possible to enter a licence that does not match the current hardware. This makes it possible to configure a Compact Flash on one hardware and move the Compact Flash to another hardware without changing the licence.

Selection of Operating Mode

All 8 sections of SW3 are set to OFF for normal operating mode.

Figure 164: Switch for selection of operating mode.



Section 1: **Network setup mode**

Section 2: **Fail-safe mode**

Section 3: Not used, must be set to OFF

Section 4: **Image Installation mode**

Section 5: **Unlicensed mode**

Section 6: Not used, must be set to OFF

Section 7: Not used, must be set to OFF

Section 8: Not used, must be set to OFF

Changing Operating Mode

1. Set the section that corresponds to the operating mode to ON.
2. Open the administration web page and press "Reboot" or follow the instructions in Power Down and Restart of Elise 2 Server (AIWS Hardware) on page 425.

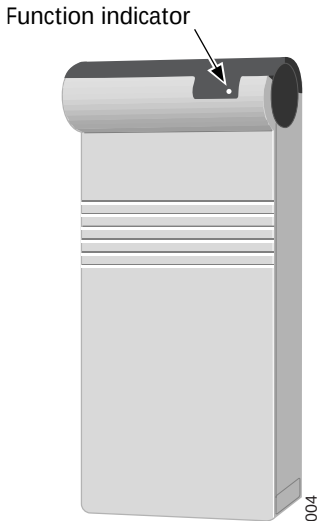
Starting the unit in Normal Mode

1. Set all sections on SW3 to OFF.

2. Open the page System Setup > General on the administration web page and check that the correct licence is entered.
3. Press "Reboot".

Function Indicator

Figure 165: Status is indicated by the Function Indicator according to the list below.



Colour	LED Indication	Status
Green		OK. Running
Orange		Fail-safe mode[1] Network setup mode[2]
Orange		Image installation mode
Orange		Starting up[3]
Orange		Power up Restart
Orange		Halted (auto. restart after 10 min.)
Orange		Unlicensed mode
Red		Low voltage
Red		Licence error
Red		Watch-dog reset
Red		Shut-down
Red		Memory error (3 s ON / 3 s OFF)
Red		Network error (IP interface initiation error) Module key error (Module key not found)
	Each segment = 100 ms	

005

[1] Fail safe mode is indicated, even if SW3 pin 2 is not set to ON, if the application on Elise 2 Server (AIWS Hardware) is not completely installed or when the application part of the Compact Flash is erased.

[2] When Elise 2 Server (AIWS Hardware) is in Network setup mode, this will always be indicated and override LED indications of other simultaneously activated modes, for example Image installation mode.

[3] Starting up mode is indicated during start of applications or if an application has lost connection to a required resource, for example A-bus or connected IPBS Master or NTP server.

Administration and Authentication

Administration on Elise 2 Server (AIWS Hardware) is done from a web browser. In order to access the administration pages a user name and password have to be given.

Important:
The default passwords have to be changed, else anyone with knowledge of a password and the IP address can access the administration web pages and make changes.

Authentication

There are two different users in all Elise 2 Server (AIWS Hardware) products; admin and sysadmin.

The user *admin* has the default password "changeme" and is used for administration and simple troubleshooting of the product. The admin has permission to change all passwords except the sysadmin password.

The user *sysadmin* has the default password "setmeup" and is used for advanced troubleshooting. The user also has access to all administration pages. The sysadmin has permission to change passwords for all users in the product.

In addition, there are two other users in some Elise 2 Server (AIWS Hardware) products. One is called *user* and the default password is "password". This user is product dependent and what it is used for is described in corresponding product documentation. This user does not have access to the administration pages where passwords normally are changed. The user can change its own password on the following page; http://xxx.xxx.xxx.xxx/admin/public/user_chpass.shtml. The password can also be changed by the users admin and sysadmin.

The other user is called *ftpuser* and the default password is "changemetoo". The user is available in products with a FTP area. The user can change its own password on the following page; http://xxx.xxx.xxx.xxx/admin/public/ftpuser_chpass.shtml.

Administration

To access the web pages below, the user *admin* is used.

The web page "xxx.xxx.xxx.xxx/admin" is used in most occasions, for example:

- System setup, for example System 900 configuration

- Troubleshooting information
- Changing passwords

On the following occasions, the web page "xxx.xxx.xxx.xxx/system" must be used.

- Current software installation has to be replaced.
- No software is installed on Elise 2 Server (AIWS Hardware).
- Compact Flash image update or installation

The system page can also be used when configuring network parameters.

Installation

Elise 2 Server (AIWS Hardware) should be placed in a dry environment with a temperature range of 0 to +40°C.

The Elise 2 Server (AIWS Hardware) can be connected via system bus cabling, or via twisted-pairs together with other units in the System 900. The Elise 2 Server (AIWS Hardware)s can communicate with each other via the TCP/IP network.

Important:
The Elise 2 Server (AIWS Hardware) must be mounted in a vertical position to ensure sufficient cooling for the electrical components.

Important:
Always follow the instructions in Power Down and Restart of Elise 2 Server (AIWS Hardware) on page 425 when disconnecting the power to the Elise 2 Server (AIWS Hardware).

Note:
Only install one Elise 2 Server (AIWS Hardware) at a time, otherwise problems might occur during IP addressing.

Installation Procedure

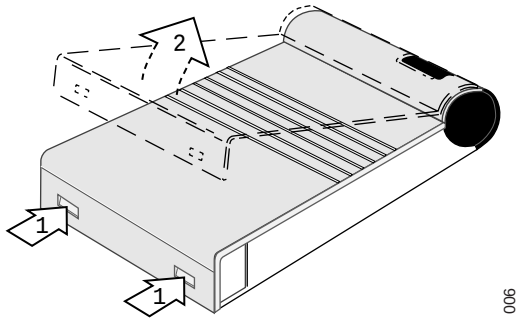
1. Read chapters 4.1 and 4.2 before starting the installation.
2. At delivery Elise 2 Server (AIWS Hardware) is configured for system communication on the A-bus. If modular system bus cabling is used and the B-bus shall be used for system communication, follow the instructions in Selection of A or B-bus *on page 432.*
3. At delivery, the Elise 2 Server (AIWS Hardware) is configured to be connected to a Central Unit on the A/B-bus. If the Elise 2 Server (AIWS Hardware) should control the communication on the A/B-bus, follow instructions in Elise 2 Server (AIWS Hardware) controlling the Communication on the A/B-bus on page 433.

4. Mount Elise 2 Server (AIWS Hardware) on the wall, follow instructions in *Mounting on page 435* and Mounting Together with Other Units *on page 435.*
5. Set the system bus address, follow instructions in System 900 Addressing *on page 436.*
6. Connect the system bus, follow instructions in Connection of System Bus *on page 437* and Connection of Supply Voltage *on page 439.*
7. Optionally connect outputs and inputs described in Additional Connections *on page 439*.
8. Activate the battery, follow instructions in Activation of Battery *on page 442*.
9. Perform a network parameter setup of Elise 2 Server (AIWS Hardware), follow instructions in Setup of Network Parameters *on page 444*.
10. Connect Ethernet connector to the Local Area Network, follow instructions in Connection of Ethernet *on page 443*.
11. Perform a test of the installation, follow the instructions in Installation Test Procedure *on page 445*.
12. Continue with additional parameter setup for the unit according to chapter - and respective software application documentation.
13. Make a backup copy of all parameters.

Opening the Housing

Use a screwdriver or similar to release the cover by applying a light pressure to the two snap catches (1) and remove the cover (2).

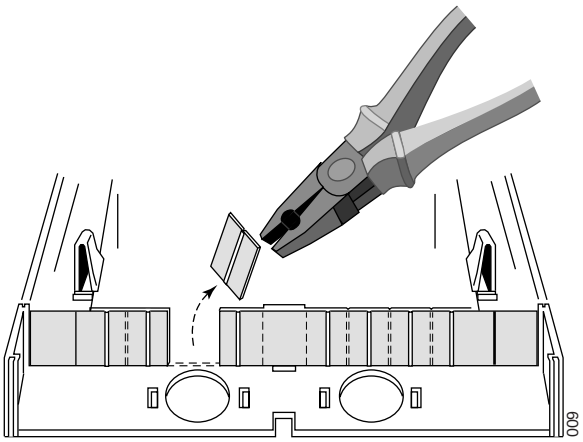
Figure 166: Opening the Elise 2 Server (AIWS Hardware) housing.



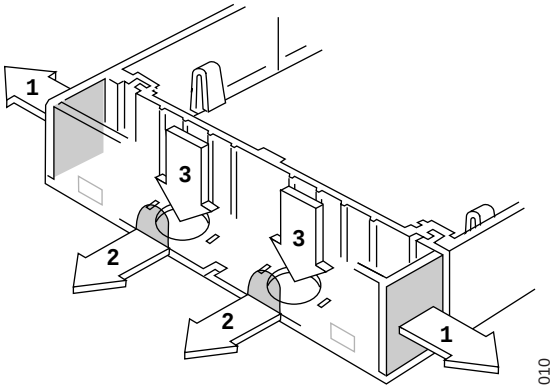
Wiring Runs

The plastic partition is scored to facilitate breaking at convenient intervals.

1. Use pliers to break off a suitable section.



2. Run the wiring out through the partition. Wiring can be run three ways from the Elise 2 Server (AIWS Hardware):



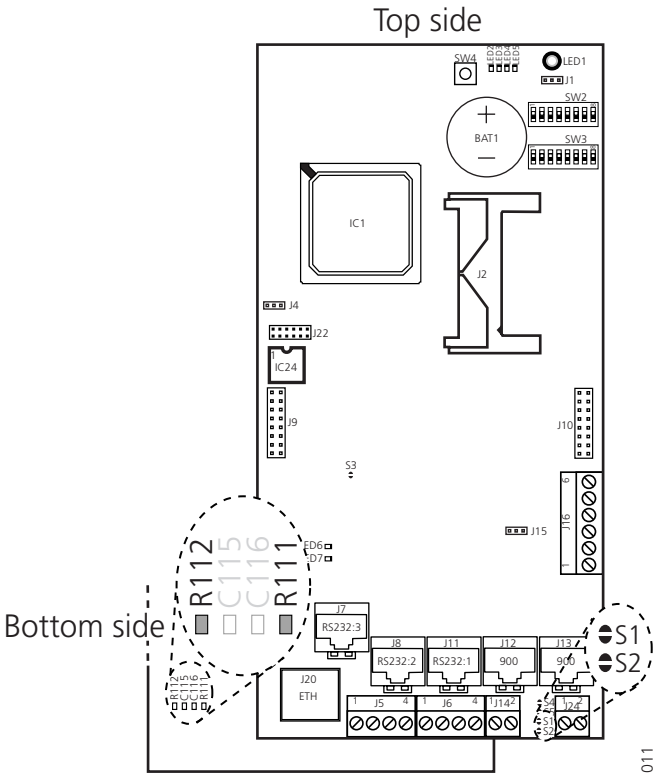
- Remove the rectangular covers and run the cabling out through the side (1).
- Break off sections at short side of case and run the cabling downwards (2).
- Run the cabling through the round holes at the bottom of the case (3).

3. Secure the wiring with cable straps.

Selection of A or B-bus

When modular bus cabling is used for connection of the System 900 bus the A-bus is used default. To use the B-bus, remove the 0 ohm resistors R111 and R112 from the circuit board and solder jumper points S1 and S2 (R111 and R112 are situated on the bottom side of the circuit board). See figure 167 on page 433.

Figure 167: Jumper points for adjusting the Elise 2 Server (AIWS Hardware) unit to use the System 900 B-bus instead of the A-bus.



Elise 2 Server (AIWS Hardware) controlling the Communication on the A/B-bus

Depending on the software application on the Elise 2 Server (AIWS Hardware), it can be used to control the communication on the A-bus, i.e. the Central Unit is not used for communication control. This can be useful when System 900 is not used for messaging but only to communicate with, for example, an Alarm Module or Output Module.

The same information that can be received when the Elise 2 Server (AIWS Hardware) is connected to an A-bus with Central Unit, can also be received when it is controlling the communication. Examples of information is input activity and pagings from the Alarm Modules (see respective software application documentation for more information about the possibilities). Alarms and Mobile data from cordless telephones can be transferred from the Elise 2 Server (AIWS Hardware) to modules connected to the A-bus. The Elise 2 Server (AIWS Hardware) does not have any other of the Central Unit functionality, for example the possibility to address Pocket Units over the A-bus or handle absence information received from Charging Racks.

System Installation

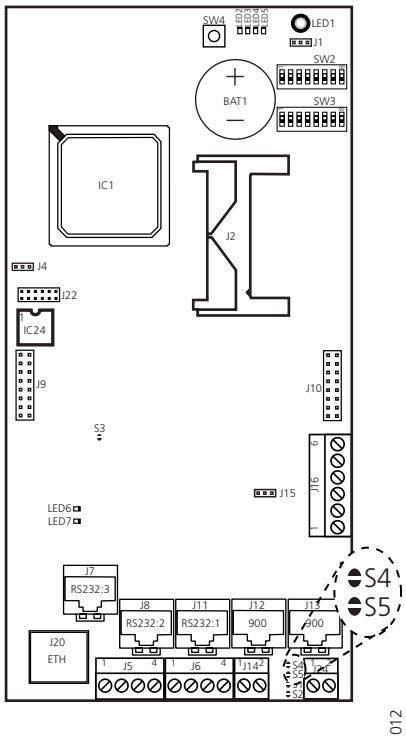
When the Elise 2 Server (AIWS Hardware) controls the communication on the A-bus, a maximum of 15 modules can be connected to the A-bus. The Elise 2 Server (AIWS Hardware) should have the address 00 and other modules that are connected to the A-bus must have addresses in the range 01-0F.

See also Message Distribution on page 447 and documentation for the System 900.

Required Hardware Modifications

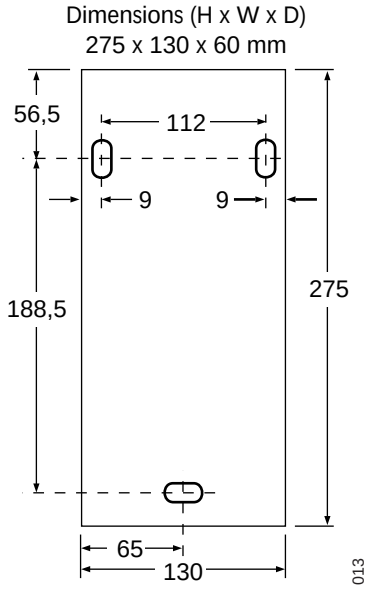
When Elise 2 Server (AIWS Hardware) shall control the communication on the A/B-bus, jumper points S4 and S5 has to be soldered, see figure 168 below.

Figure 168: Jumper points for configuring the Elise 2 Server (AIWS Hardware) unit to be a communication controller on A/B-bus.



Mounting

Dimensions for installation of the Elise 2 Server (AIWS Hardware).

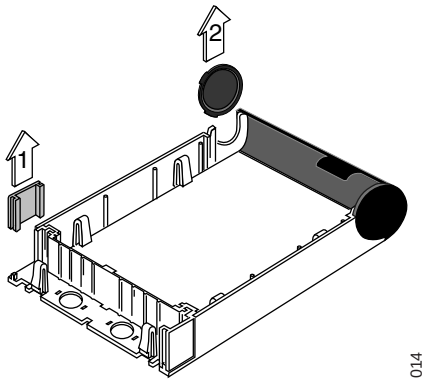


Note:

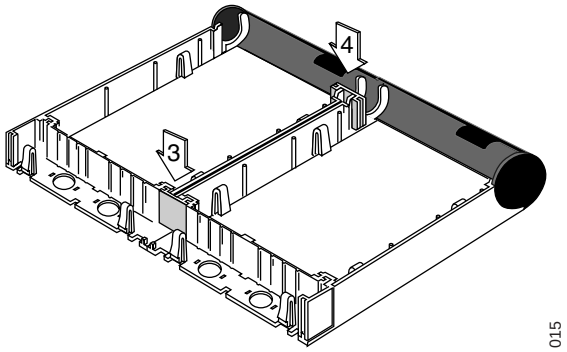
To facilitate service after the unit is installed, we recommend a free space of about 150 mm above and 50 mm below the unit.

Mounting Together with Other Units

1. Remove the rectangular (1) and circular (2) covers.



2. The rectangular covers are used to fasten units to each other (3 and 4).

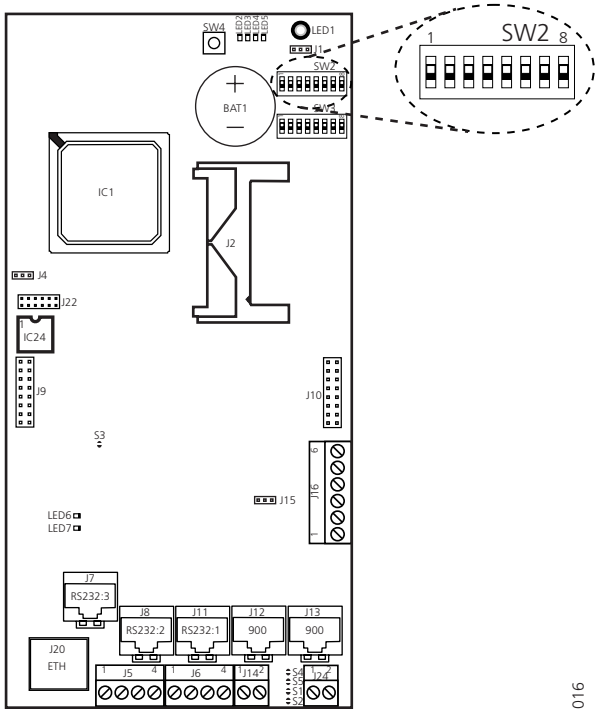


3. Fasten the unit with three screws, see the illustration in Mounting *on page 435*.

System 900 Addressing

The System 900 address consists of two hexadecimal digits that are selected by the eight sections of the address switch, SW2. Sections 5-8 of the switch select the first (most significant) digit and section 1-4 select the second (least significant) digit. The address must not be the same as any other System 900 unit address (see document *System Installation, On-site Paging System, TD 90227GB* for more information*).*

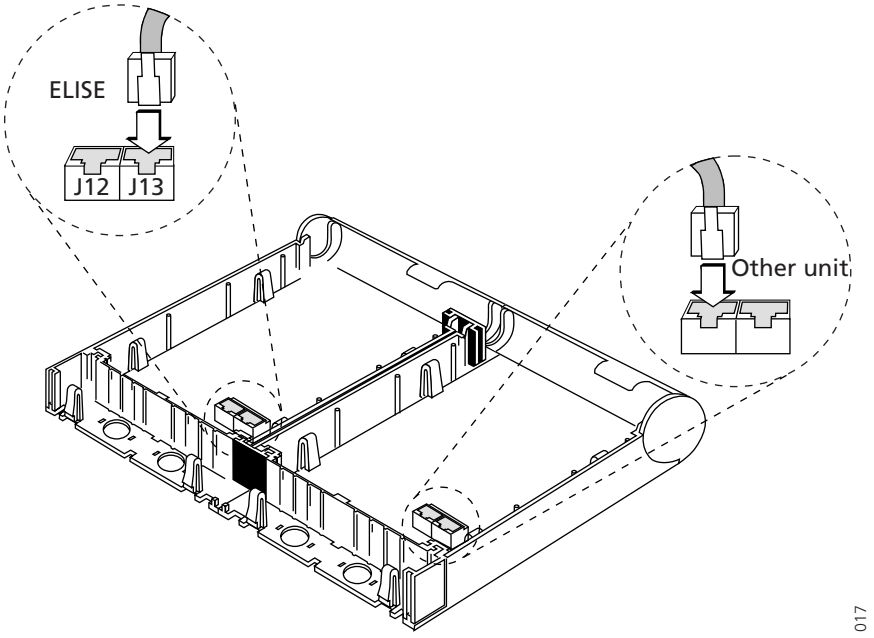
Figure 169: The Elise 2 Server (AIWS Hardware) addressing switch.



Connection of System Bus

The Elise 2 Server (AIWS Hardware) can be installed together with other System 900 units, either via modular system bus cabling or via twisted-pair lines.

Bus Connection to Modular Jacks



1. The illustration above shows an Elise 2 Server (AIWS Hardware) placed to the left of another System 900 unit. Connect the bus cable as shown, from connector J12/J13 on the Elise 2 Server (AIWS Hardware) to the bus connector on the other unit.

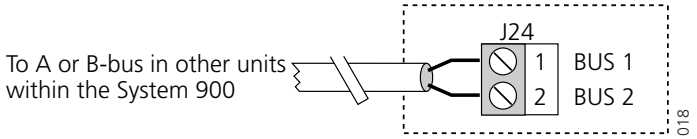
Note:

Make sure connectors are correctly inserted!

Bus Connection to Screw Terminals

If system bus cable is not used, connections are made with twisted pairs to screw connector J24.

Figure 170: Connection of System 900 bus.



Other System 900 units are connected to A or B-bus, pin 1 and 2 at screw connector J24.

Note:

Observe polarity. Use only twisted pairs for two-wire connections.

Connection of Supply Voltage

A separate power supply is connected to screw connector J5, pin1 and 2. The current through J5 must not exceed 3A.

Note:

External power supply must incorporate an insulating transformer. Output current must be inherently limited to max. 8 A.

Note:

The external power supply must comply with EN IEC 60950-1 requirements.

Note:

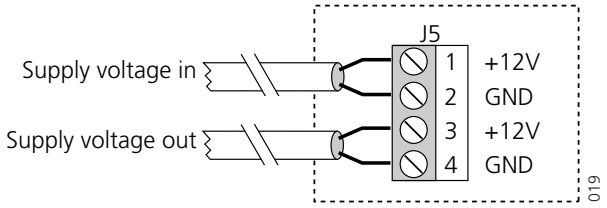
For US and Canada: The Elise 2 Server (AIWS Hardware) shall only be connected with the following power supply: AWS 1166, SA60, Sino American Electronic Co. Ltd. Switching Adapter.

1. Connect the power supply cable to J5:1-2.

Note:

+12 V wire is marked with white stripes
GND wire has a text printing of the cable characteristics

Figure 171: Connection of supply voltage

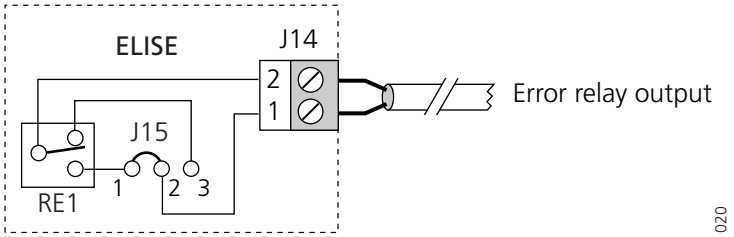


Additional Connections

Error Relay Output

A relay output on connector J14 is used to indicate Elise 2 Server (AIWS Hardware) malfunction and can also be used to indicate other errors. See application documentation for more information about functionality.

Figure 172: Jumpering that decides when the error relay output is active, either when the relay operates or is released.



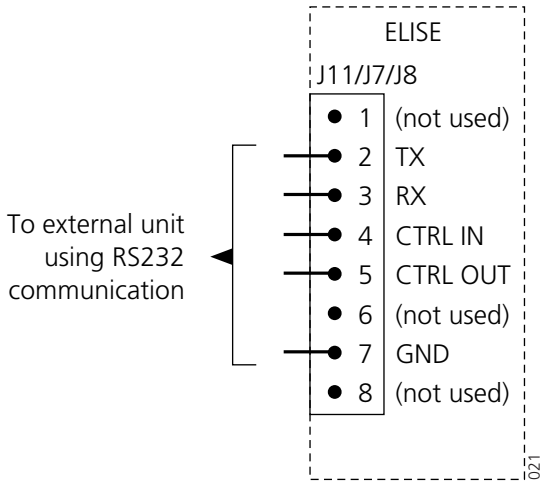
The jumpering J15 decides if the output shall be active when the relay is operating or released. 1-2 selects operating and 2-3 selects released. In figure 172, the relay is released and as the jumpering is set to 1-2 the circuit is open and the error relay output is inactive.

At power-up or restart of the Elise 2 Server (AIWS Hardware), the relay is released until the applications are working properly. If the relay is released longer, Elise 2 Server (AIWS Hardware) is malfunctioning.

RS232 Communication with External Unit

The Elise 2 Server (AIWS Hardware) has three identical RS232 connectors; J7, J8 and J11. Depending on software application the RS232 ports can be used or not. How to connect external equipment to the Elise 2 Server (AIWS Hardware) is described in the documentation of the software application. In figure 173, the RS232 connectors on the Elise 2 Server (AIWS Hardware) is described.

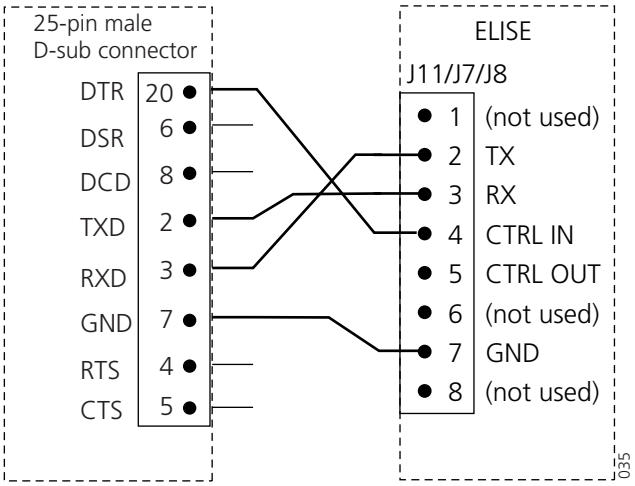
Figure 173: Description of the Elise 2 Server (AIWS Hardware) RS232 ports.



Connections for Serial Line Printer

To connect the serial line printer, see figure 174 for the pin-layout and wiring run.

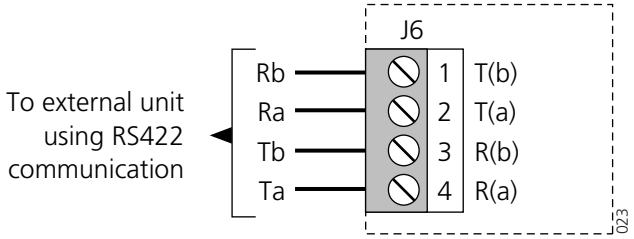
Figure 174: Connections for serial line printing.



RS422 Communication with External Unit

Depending on software application the RS422 port is used or not. If it is used, the connector J6 is connected to the external unit as shown in the figure below.

Figure 175: Connection of external unit via the RS422 port.



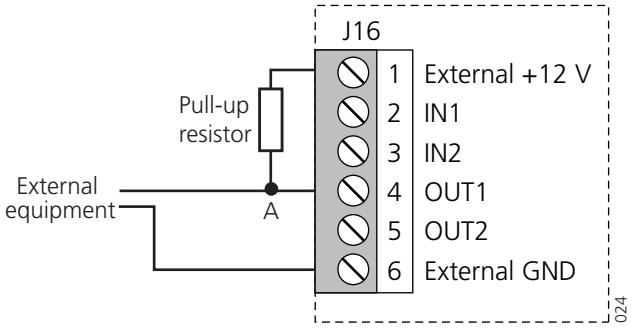
Connection of AUX Inputs and AUX Outputs

The application of the inputs and outputs are software dependent.

Two digital inputs and two digital outputs can be connected via J16. The outputs are of open-collector type and the output signals are dimensioned for 100 mA at max 12 V.
A pull-up resistor should be connected to the output as shown in figure 176.

Galvanic isolation of the inputs and outputs is provided by using a separate power supply. When galvanic isolation is not needed, supply voltage can be taken from the Elise 2 Server (AIWS Hardware) circuit board by connecting J16-1 to J5-3 and J16-6 to J5-4.

Figure 176: Connection of inputs and outputs.

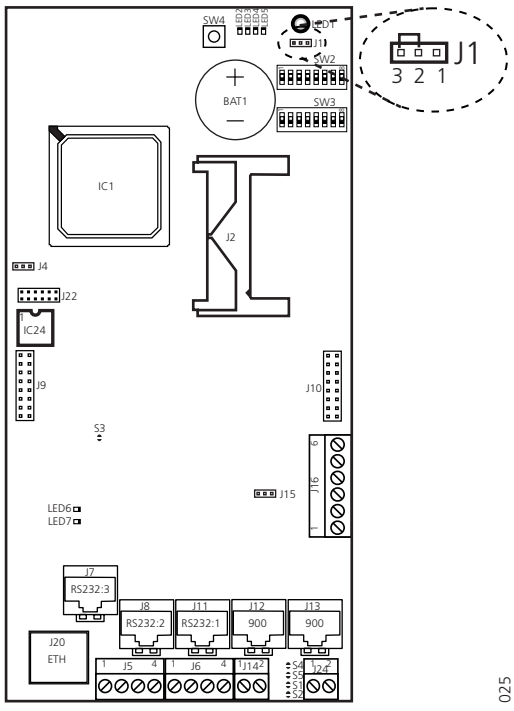


The inputs IN1 and IN2 are active when they are connected to 12 V. When the output OUT1 is active, the potential in point A in figure 176 will be close to 0 V. The same applies for a similar connection for OUT2.

Activation of Battery

Activate the real-time clock backup battery by closing jumper J1 on the circuit board. (Jumper pin 2-3 to activate).

Figure 177: Battery placement.



The backup battery is a 3V lithium battery. At any interruption in the ordinary power supply, the real-time clock will be supplied by the battery.

Battery Data

Current consumption, real-time clock:

	Typical	Maximum
3V battery	3 µA	40 µA

Battery life (battery connected):

	Typical	Minimum
Power not connected	6 years	0.5 years
Power connected		10 years

Battery life (battery not connected):

Minimum 10 years.

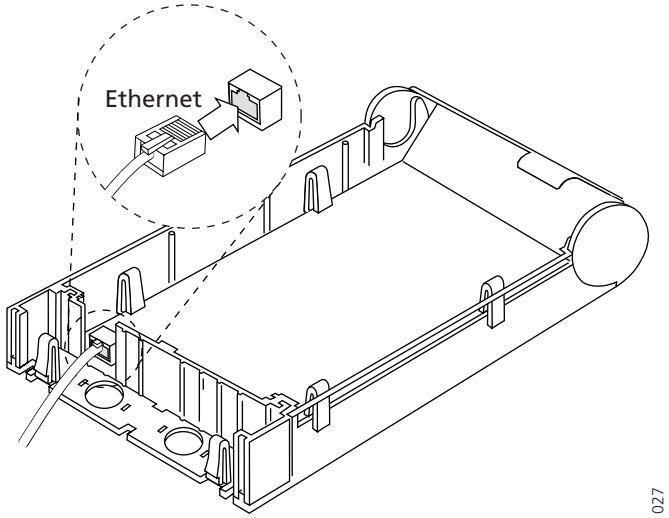
Connection of Ethernet

If Elise 2 Server (AIWS Hardware) is connected directly to a PC, a crossover cable has to be used. If Elise 2 Server (AIWS Hardware) is connected to a HUB, an ordinary (straight through pinouts) cable has to be used. The cable supplied is an ordinary cable.

Connect the Ethernet cable to connector J20, see figure 178 below.

It is recommended to break off a suitable section before inserting the Ethernet cable, see Wiring Runs on page 431.

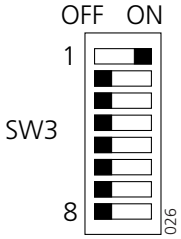
Figure 178: Connection of Ethernet cable



Setup of Network Parameters

1. Set section one in SW3 to ON to set Elise 2 Server (AIWS Hardware) in "Network setup mode". The remaining sections should be set to OFF.

Figure 179: Setting the Elise 2 Server (AIWS Hardware) in Network setup mode.



2. Connect Elise 2 Server (AIWS Hardware) Ethernet connector J20 either
   - with crossover cable directly to a PC or
   - with ordinary (straight through pinouts) cable via a HUB on the LAN to the PC. Observe that it has to be the same LAN, i.e. same Ethernet Broadcast Domain.
3. Connect the power cable and wait until the Function Indicator indicates with steadily orange light. Elise 2 Server (AIWS Hardware) now has the network setup IP address 192.5.36.229.

   If the function indicator is red, check that supply voltage is 12.5 Vdc ±10%.

4. To be able to access Elise 2 Server (AIWS Hardware) from a PC, the PC has to belong to the same network as Elise 2 Server (AIWS Hardware) or Elise 2 Server (AIWS Hardware)’s IP address has to be found in the PC’s route table. To facilitate this, the program "Route to ELISE" is provided.

   Start the program "Route to ELISE". Press "Attach" to add the Elise 2 Server (AIWS Hardware) network setup IP address to the route table.
5. Press "Launch config". This will open the page "192.5.36.229/system" in your browser. The user ID is "admin" and the default password is "changeme".
6. Press "System Setup" and navigate to "Network". Set the network parameters. Use the on-line help if any problems occur.
7. Navigate to "System 900" and select the bus operating mode for the module. The modes are described in the on-line help.
8. Change the default passwords for **all** users. If the passwords are not changed, anyone with knowledge of the default passwords can access your Elise 2 Server (AIWS Hardware) and change any parameter.
9. Set all sections in SW3 to OFF. Reboot Elise 2 Server (AIWS Hardware) by navigating to "Reboot".
10. Return to the program "Route to ELISE" and press "Detach" to remove the Elise 2 Server (AIWS Hardware) network setup IP address from the route table. Close the program.
11. When Elise 2 Server (AIWS Hardware) has been restarted, enter the URL xxx.xxx.xxx.xxx/admin in your browser (xxx.xxx.xxx.xxx is the IP address that was given to Elise 2 Server (AIWS Hardware) during network setup) and see that it has started up correctly.
12. If an entry is added in the DNS, it will be easier to connect to Elise 2 Server (AIWS Hardware).

Installation Test Procedure

1. If the Elise 2 Server (AIWS Hardware) is connected to a Central Unit, the indicator will light steadily green within 90 seconds.

   If the indicator continues to flash orange, check:

   - Connections on Elise 2 Server (AIWS Hardware)
   - Elise 2 Server (AIWS Hardware) has a correct System 900 address
   - Check in the AIWS advanced configuration > system information of all applications are running.
     Check if the following are connected: Time synchronizer, DECT interface, SMS center.
     Check at the DECT DH (Device handler) whether the Nr. of DM (Device Managers) is more than 0.

Note:

Check also the application documentation for trouble-shooting information.

If the indicator starts to blink red, check:

- IP address
- Network connections
- Licence
- Module key

If everything seems to be OK but the function indicator still flashes, the fault is probably located outside the Elise 2 Server (AIWS Hardware):

Check the other System 900 units according to document *System Installation, On-site Paging System, TD 90227GB,* or contact your dealer.

2. Open the administrator page in a browser and navigate to "Troubleshoot". Use the information log and tools given to test that Elise 2 Server (AIWS Hardware) is functioning properly.
3. Replace the cover.
4. When all other units are installed, perform the system test described in *System Installation, On-site Paging System, TD 90227GB*.

Clock Synchronisation and Time Settings

The clock in different Elise 2 Server (AIWS Hardware)s can be set from the web browser, A-bus (i.e. Central Unit in System 900) or a time server. To be able to synchronize the clocks in different Elise 2 Server (AIWS Hardware)s a time server has to be used. Depending on software application and licence, an Elise 2 Server (AIWS Hardware) can be used as time server. An external time server supporting the Network Time Protocol (NTP) can also be used. Normally the Elise 2 Server (AIWS Hardware) that is used as time server synchronizes with an external time server, and then all other Elise 2 Server (AIWS Hardware) use that Elise 2 Server (AIWS Hardware) as the time server.

To select time source do as follows:

1. Open the administration pages of the Elise 2 Server (AIWS Hardware) by entering "xxx.xxx.xxx.xxx/admin" in the address field in the web browser.
2. Click on "Settings" in the left menu.
3. Select time source; Web browser, A-bus or Time server.

Note:

Not all system’s Central Unit can provide the time.

Independent of time source the Elise 2 Server (AIWS Hardware) can handle different time zones and adjust the clock according to daylight saving time.

The date and time format controls the appearance of date and time in log views and application specific pages. The administration pages that are common to all Elise 2 Server (AIWS Hardware) will display date and time in the following format: YYYY-MM-DD, HH:MM:SS (for example 2000-01-31 13:30:00). This format for date and time will also be used in exported log files.

An Elise 2 Server (AIWS Hardware) can also set the time in connected systems, for example System 900. In this case, the Elise 2 Server (AIWS Hardware) will send its time to the connected system once every 24-hour period and when the time is updated.

To set the time in System 900 from the Elise 2 Server (AIWS Hardware) do as follows:

4. On the time settings page, enter when the Elise 2 Server (AIWS Hardware) should send its time to System 900 in the "Time push time" field.
5. Click "Setup System 900 time".
6. Select "Yes" in the "Set time in System 900".

Setting time in other carrier systems is done similarly. If several carrier systems are available, the time will be sent at the same time to all systems.

Time Synchronization

It can take a few seconds to synchronize the date and time during start up. It also takes a few seconds if the server parameters changes to another server.

When the time is changed in the time server it takes different long time to synchronize the time, depending on how the modules are set up and how they are connected together. If a module does not have a time server licence, it takes about 15 minutes to update its clock. A module with a time server licence takes about 30 minutes to update.

Message Distribution

In the administration pages, there are distribution lists that are used to distribute incoming information to other modules. If a module is to be connected to several carrier systems, for example both System 900 and a Cordless Telephone System, distribution of incoming data from the different systems has to be configured independently. The distribution of "Status Logs" and "Activity Logs" are configured separately. Advanced activity settings for activity logs are described in the *Function Description, Activity Logging in Unite, TD 92341GB.*

The addressing is described in the examples below:

Addressing a module on the System 900 A-bus

When a specific module on the A-bus is addressed, the data will be transferred directly to that module. It is however not necessary to address a specific module on the A-bus as the Central Unit in the System 900 can distribute the data to a module. Note that this requires configuration of the Central Unit.

- *No module addressing*

  127.0.0.1/S900

  The data is sent to the System 900 interface in the Elise 2 Server (AIWS Hardware), which sends the data on the A-bus without the module address defined. The Central Unit in the system has to be configured to distribute the data to a module. It is also possible to address the System 900 interface on another module by entering its IP address instead of 127.0.0.1 (localhost).

- *Module addressing*

  127.0.0.1/S900?03

  The data is sent to the System 900 interface (127.0.0.1/S900) in the Elise 2 Server (AIWS Hardware) and is then sent to the module with address 03 in the system. It is also possible to address the System 900 interface on another module by entering its IP address instead of 127.0.0.1 (localhost).

- *System and module addressing*

  127.0.0.1/S900?00103

  The data is sent to the IMS System 900 interface (127.0.0.1/S900) and is then sent to the module with address 03 on the A-bus (00**1**03) within the system with address 00.

Addressing another Unite compliant module on the LAN

The addressing includes the IP address that the data should be distributed to and also which service on that address that should take care of it. How a unit is addressed is described in each units documentation.

- *Addressing of another Unite compliant module*

  xxx.xxx.xxx.xxx/Service

  First the IP address of the module is defined. After the “/”, the application service that should take care of the data is specified.

Below is an example that describes how to distribute data from an Elise 2 Server (AIWS Hardware) software application to an Alarm Management Server.

- *Addressing of an Alarm Management Server*

  xxx.xxx.xxx.xxx/EventHandler

  First the Alarm Management Server IP address is defined. After the “/”, the application service EventHandler is specified.

Note:

For AMS version 3.00 and 3.10 the service cannot be used. Instead the correct port on the AMS, port number 10010, has to be used for addressing, i.e. xxx.xxx.xxx.xxx/:10010.

Unite Name Server (UNS)

The UNS is used to resolve addresses into complete Unite destinations. The Elise 2 Server (AIWS Hardware) can be configured to send all requests to the local UNS (stand-alone mode) or to forward all requests to a centralised UNS (forwarding mode). In forwarding mode, the local UNS will only be used if the centralised UNS cannot resolve the address.

Maintenance Information

Replacement of the Compact Flash

Note:
Only Compact Flashes supplied by Ascom Tateco can be used.

1. Remove the cover, see Opening the Housing on page 431.
2. Perform a power down of the unit, see Power Down and Restart of Elise 2 Server (AIWS Hardware) on page 425.
3. Remove the circuit board, see Circuit Board Replacement on page 452.
4. Replace the Compact Flash.
5. Put the circuit board back into the cabinet.
6. If the Compact Flash is not preprogrammed with a valid IP address follow the instructions in Setup of Network Parameters *on page 444* else connect the power cable.
7. Replace the cover.

Updating Application Software

The application software on the Compact Flash can be updated, for example if new functionality for the application has been released. The version of the application software has to be compatible with the Elise 2 Server (AIWS Hardware) operating system version. See *Replacing an Image on the Compact Flash* below for information about how to upgrade the operating system.

The AIWS device manager needs to be closed before the software update can be started. Otherwise, the software upgrade will not start until the AIWS device manager will be closed. There is no additional indication or warning text that the AIWS Device manager is still open.

Important:
When updating the application software, the customized configuration of the NetPage will be overridden and needs to be restored afterwards. Therefore it's recommended to take a backup of all NetPage files as well. Refer to Backup and Restore of NetPage files on page 408.

1. Open the page xxx.xxx.xxx.xxx/system.
2. Press "Software". The current software versions for the application and Elise 2 Server (AIWS Hardware) are shown.
3. Navigate to "Install software" and follow instructions.

Note:
The .eas files must be used to update the application software.

It is possible to update the software over a remote connection. However, note that it is not possible to update software on the Elise 2 Server (AIWS Hardware) that handles the remote connection.

Replacing an Image on the Compact Flash

The complete Compact Flash image has to be replaced if the Elise 2 Server (AIWS Hardware) operating system has been updated.

Important:
When a new image is installed, all information on the Compact Flash will be replaced (this includes **all** IP settings). It is strongly recommended to take a backup of the parameters before the image is installed in order to be able to recover the unit to original setup. Refer to Backup and Restore of NetPage files on page 408.

1. Open the page xxx.xxx.xxx.xxx/system.
2. Press "Software". Navigate to "Install Image". Follow the instructions on the page.
3. Select parameter backup and take a backup of the current configuration incl. network setup and license key.
4. Select start installation. The AIWS will reboot in image installation mode. If the automatic redirect fails after the reboot press the back button in your browser. If this fails either open the page http://xxx.xxx.xxx.xxx/install manually. Refer to Avaya In-Building Wireless Server (AIWS) on page 511 to get further information.
5. Select the image file and press writ e to flash to start the installation. It will take some time to install the new image. The time is dependent of the size of the image and the type of connection to the Elise 2 Server (AIWS Hardware).

Note:

The .img file must be used to update the complete image on the Compact Flash.

6. Restore the old AIWS configuration from the backup that was taken before. Without restoring all parameters especially the network setup and license key will get lost after reboot.

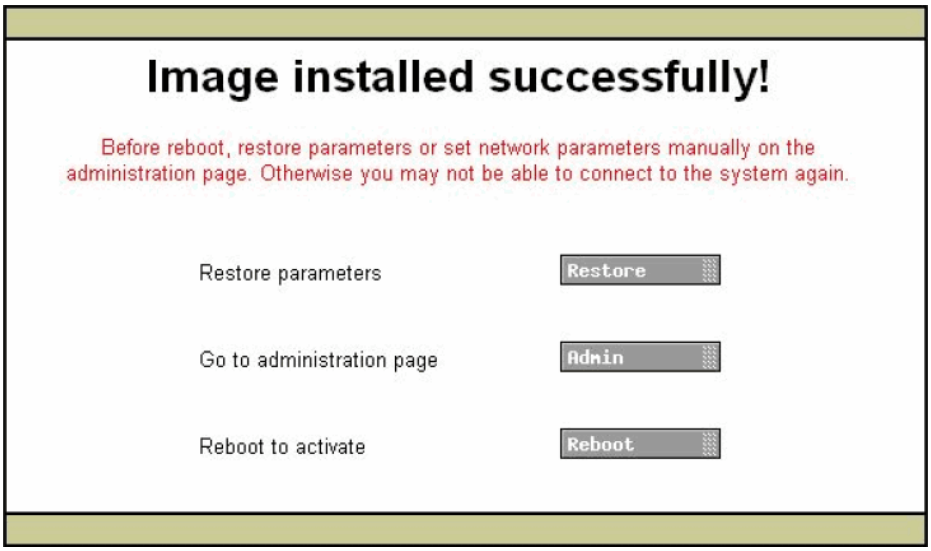


Image installed successfully!
Before reboot, restore parameters or set network parameters manually on the administration page. Otherwise you may not be able to connect to the system again.
Restore parameters
Restore
Go to administration page
Admin
Reboot to activate
Reboot

7. Press reboot to start the AIWS with the new software image

It is possible to replace the image over a remote connection. However, note that it is not possible to replace the image on the Elise 2 Server (AIWS Hardware) that handles the remote connection.

Installing an Image on an empty Compact Flash

An image can also be installed on an empty Compact Flash.

1. Set section one and four in SW3 to ON, to set the Elise 2 Server (AIWS Hardware) in "Network setup mode" and "Image installation mode".
2. Perform a power down of the unit and then restart it, see Power Down and Restart of Elise 2 Server (AIWS Hardware) on page 425.
3. Use the program "Route to ELISE" to connect to the Elise 2 Server (AIWS Hardware). A web page where a new image can be installed will open.
4. Select the image to install. Note that it will take some time to install the new image. The time is dependent of the size of the image and the type of connection to the Elise 2 Server (AIWS Hardware).

Note:

The .img file must be used to update the complete image on the Compact Flash.

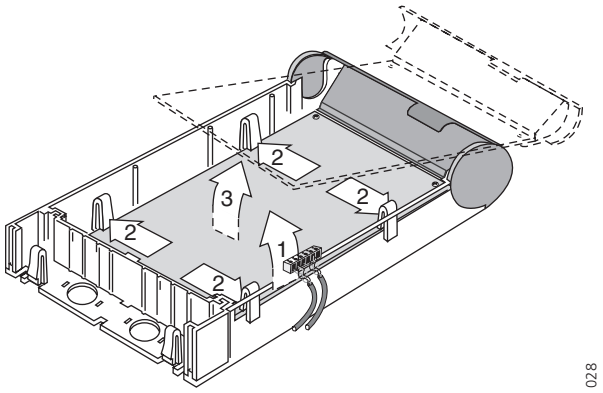
5. Set section four in SW3 to OFF and press "Reboot" on the displayed web page, to leave "Image installation mode".
6. Setup the parameters according to instructions in Setup of Network Parameters *on page 444* or recover parameters from a backup file.

Updating the Software Licence

1. Open the page xxx.xxx.xxx.xxx/admin and press "General".
2. Enter the new licence, and press "Activate".

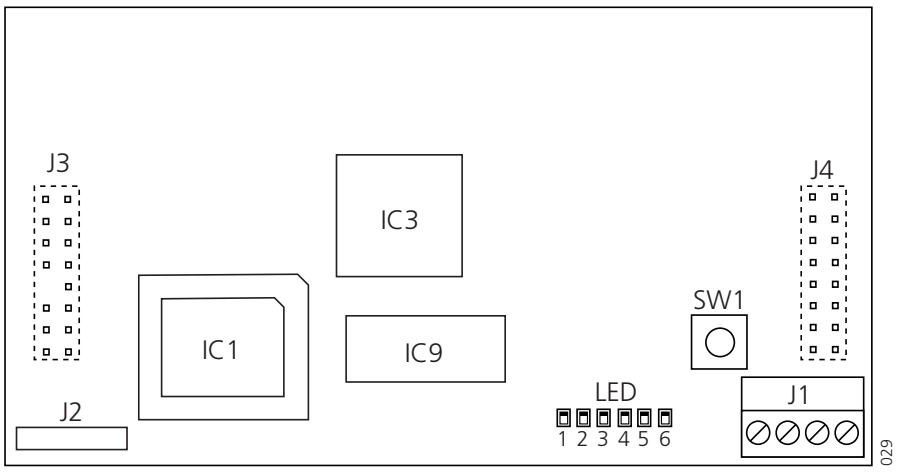
Circuit Board Replacement

Figure 180: Replacing the Elise 2 Server (AIWS Hardware) circuit board.



1. Perform a power down of the unit.
2. Remove the cover, see Opening the Housing on page 431.
3. Lift off the screw connectors from the circuit board. (1)
4. Press the four holding clips to release the circuit board (2).
5. Remove the circuit board (3).
6. Install the new circuit board in the case and make sure the circuit board clicks into position.
7. Set all switches and jumpers as they were on the original circuit board and replace the screw connectors.
8. Check installation according to Installation Test Procedure *on page 445*.

LON Piggy Back Circuit Board (LPB)



Connectors and Jumper Points

J1	Connection for the teleCARE M LON (only use terminals 1 and 2)
J2	Connector for In System Programming (ISP) of the flash micro controller
J3	Male connector to be put on J9 on Elise 2 Server (AIWS Hardware) circuit board. Pin 12 cut off
J4	Male connector to be put on J10 on Elise 2 Server (AIWS Hardware) circuit board

Push button

SW1	For service

Micro Controllers and others

IC1	Flash memory
IC3	Neuron micro controller
IC9	PIC flash micro controller

LEDs

LED1	LON Rx
LED2	LON Tx
LED3	See table for LED3 in Status Indication of LPB on page 454
LED4	Rx data transfer
LED5	Tx data transfer
LED6	See table for LED6 in Status Indication of LPB on page 454

Status Indication of LPB

LED3

Sequence	Status 1 Indication (LED3)	Function
1		Power up (On momentarily)
2		Normal operation (Off continously)
3		Watch-dog reset
4		Unconfigured (Neuron uC)
5		No application (no Neuron firmware)
	Each segment = 100 ms	

030

LED6

Sequence	Status 2 Indication (LED6)	Function
1		Searching for baudrate. No connection with NSS/ISC main board
2		Normal operation. Connection with NSS/ISC main board (LON Protocol running)
	Each segment = 250 ms	

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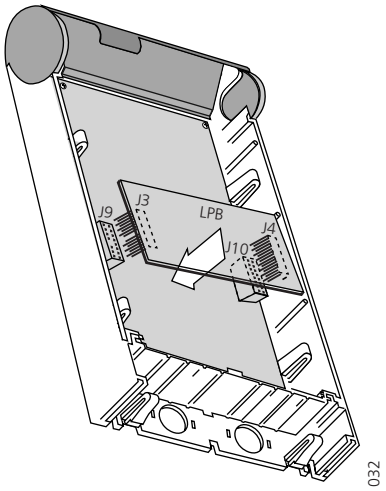
Installation of LPB

Important:
Always follow the instructions in Power Down and Restart of Elise 2 Server (AIWS Hardware) on page 425 when disconnecting the power to the Elise 2 Server (AIWS Hardware).

1. Remove the cover from the Elise 2 Server (AIWS Hardware), see Opening the Housing on page 431
2. Perform a power down of the Elise 2 Server (AIWS Hardware), see Power Down on page 425
3. Lift off the screw connector J1 from the LPB

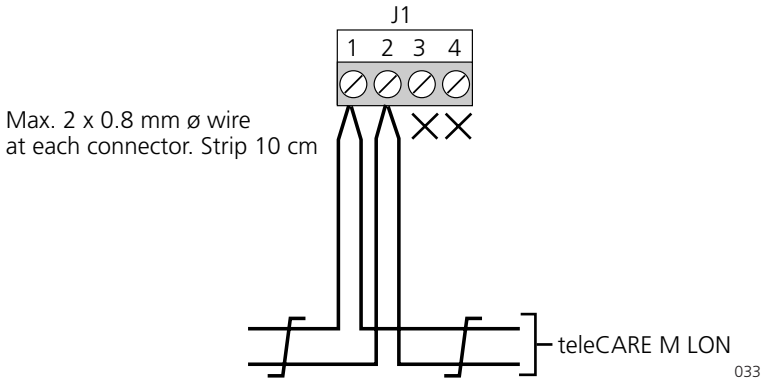
4. Attach the LPB on the Elise 2 Server (AIWS Hardware) circuit board. Carefully line up the male connector pins of the LPB with the female connector of the Elise 2 Server (AIWS Hardware), then press the LPB down firmly. (To avoid misalignment, the pin 12 on the J3 connector of the LPB is cut off and the corresponding hole on the J9 connector of Elise 2 Server (AIWS Hardware) plugged). See figure 181 below.

Figure 181: Mounting of LPB on Elise 2 Server (AIWS Hardware) circuit board



5. Connect cables to the screw connector J1. Use max. 2 x 0.8 mm wires per connector. Strip the outer sheath of the cables to a length of about 10 Communication Manager. Only use pins 1 and 2 for connection of the LON bus in/out. (Pins 3 and 4 can be used for connection of other LON devices, for example SLA). See figure 182 below.

Figure 182: Cabling of screw connector J1



6. Replace all removed connectors
7. Close the cover and restart Elise 2 Server (AIWS Hardware), see Power Down and Restart of Elise 2 Server (AIWS Hardware) on page 425.

Technical Data

Introduction

This chapter shows you technical specifications for the following IP-DECT equipment and accessories:

- IP-DECT Base Station (IPBS)
- Base Station RM627 (BS330)
- Base Station RM637 (BS340)
- Avaya 3725 DECT Telephone
- Avaya 3720 DECT Telephone
- Advanced Charger
- Basic Charger
- Multiple Battery Charger
- Rackmount Charger
- Portable Device Manager (PDM)
- Avaya In-Building Wireless Server (AIWS)
- Omnidirectional single antenna
- Directional dual antenna
- Directional single antenna
- Outdoor housing DECT base stations

IP-DECT Base Station (IPBS)

Versions	
IPBS with internal antenna	
IPBS with external antenna	
DECT frequencies	
IPBS Standard for use with DECT in the 1880-1900 MHz frequencies	
IPBS LA (Latin America) for use with DECT in the 1910-1930 MHz frequencies	
IPBS Brazil for use with DECT in the 1910-1920 MHz frequencies	
IPBS US (North America) for use with DECT in the 1920-1930 MHz frequencies	
Physical	
Dimensions (l × w × d):	165 × 200 × 56 mm (including mounting bracket)
Weight:	450g
Material:	ABS moulded plastic
Colour:	Beige
External connectors	2 × RJ45
Power	
Power over Ethernet IEEE 802.3af or local power supply	
Operating voltage:	21 to 56 Vdc
Power consumption:	typical 4W, maximum 5W
Network	
Ethernet:	10/100baseT
Voice over IP	
Voice over IP:	H.323 XMobile incl. H.450
Voice Encoding:	G.711 A-law / µ-law (64kbps) G.723.1 (5.3 kbps) G.729A and AB (16 kbps) G.726 (32 kbps)

Radio	
RF output power (e.r.p.), EU:	Between 23 dBm and 28 dBm (with internal antenna) Between 20 dBm and 25 dBm (with external antenna)
RF output power (e.r.p.), US:	Between 17 dBm and 21,6 dBm (with internal antenna)
Environmental	
Operating temperature:	-10°C to +55°C
Storage temperature:	-40°C to +70°C
Relative operating humidity :	15 to 90%, non condensing
Relative storage humidity :	5 to 95%, non condensing
Immunity to electromagnetic fields:	3V/m (EN61000-4-3)
Immunity to ESD:	4 kV contact discharge and 8 kV air discharge (EN61000-4-2)
Compliance to European regulations and standards	
EU directives:	1999/5/EC (R&TTE)
Radio:	EN 301406, TBR22
Safety:	EN 60950-1
EMC:	EN 301 489-6
Product marking:	CE
EC Declaration of Conformity can be found at: http://www.ascom.com/ws/products_ws.htm	
Compliance to US and Canadian regulations and standards	
Safety:	CSA/UL 60950-1
EMC/Radio:	FCC part 15 (Class B) and RSS-213 ans ICES-003
Product marking:	FCC ID: BXZIPBS1, IC:3724B-IPBS1
Compliance to Australian regulations and standards	
Radio:	ACA TS028
Safety:	IEC 60950 3Ed
Product marking:	

Base Station RM627 (BS330)

Physical	
Dimension:	200 (w) x 165 (d) x 56 (h) mm
Weight:	470 g
Material:	ABS moulded plastic
Colour:	light grey
Connectors:	two RJ45 connectors for Upn/power, one RJ12 connector for factory testing purposes.
Environmental	
Operating temperature:	-10°C to +55°C
Storage temperature:[1]	-40°C to +70°C
Relative operating humidity:	15 to 90%, non condensing
Relative storage humidity:	5 to 95%, non condensing
Enclosure protection:	IP20, IEC EN60529
Functional	
Operating voltage :	21 to 56 Vdc
Power consumption :	between 1.2 W and 2.0 W (depending on the number of calls active)
RF output power (e.r.p.) :	between 23 dBm and 28 dBm (depends on direction due to internal antenna characteristics)
Receiver sensitivity :	at least -86 dBm at B.E.R. = 10-3
Compliance to regulations and standards	
CE regulation:	1999/5/EC, Radio & Telecommunications Terminal Equipment (R&TTE) Directive 89/336/EC Electromagnetic Compatibility Directive (EMC) 73/23/EC Low Voltage Directive (LVD).
Conformity marking:	CE
DECT standard:	EN 301 406:2001 (DECT) EN 300 444:2001 (TBR22 GAP)

Safety standard:	EN60950-1:2001
EMC standard:	EN301489- 6:2002

Base Station RM637 (BS340)

Physical	
Dimension:	200 (w) x 165 (d) x 56 (h) mm
Weight:	496 grams (incl. Standard external antennas)
Material:	ABS moulded plastic
Colour:	light grey
Connectors:	two RJ45 connectors for Upn/power, one RJ12 connector for factory testing purposes.
Size standard antenna:	107 (l) x 8.5 (d) mm
Antenna connectors (Base Station):	MCX SMT type female receptacle from Amphenol (KJMCX625100-002-3GT30G-50; gold plated)
Antenna connectors (Antenna):	MCX straight crimp male plug fromAmphenol (919-101P-51S1X; gold plated
Material:	ABS moulded plastic
Environmental	
Operating temperature:	-10°C to +55°C
Storage temperature:[1]	-40°C to +70°C
Relative operating humidity:	15 to 90%, non condensing
Relative storage humidity:	5 to 95%, non condensing
Enclosure protection:	IP20, IEC EN60529
Functional	
Operating voltage :	21 to 56 Vdc
Power consumption :	between 1.2 W and 2.0 W (depending on the number of calls active)
RF output power (e.r.p.) :	between 20 dBm and 25 dBm (depends on direction due to external antenna characteristics)
Receiver sensitivity :	at least -86 dBm at B.E.R. = 10-3

Compliance to regulations and standards	
CE regulation:	1999/5/EC, Radio & Telecommunications Terminal Equipment (R&TTE) Directive 89/336/EC Electromagnetic Compatibility Directive (EMC) 73/23/EC Low Voltage Directive (LVD).
Conformity marking:	CE
DECT standard:	EN 301 406:2001 (DECT) EN 300 444:2001 (TBR22 GAP)
Safety standard:	EN60950-1:2001
EMC standard:	EN301489- 6:2002
Accessories	
Directional single antenna Directional dual antenna Omnidirectional single antenna Outdoor housing	

Avaya 3725 DECT Telephone

Physical	
Dimensions (l × w × d):	134 × 53 × 26 mm
Weight:	130 g (battery and clip included)
Material:	Case: PC/ABS, Key pad: PC, Clip: PPA
Colour:	Grey
Display (w × h):	28 x 35 mm, CSTN display
Clip:	Hinge-type (standard) or swivel type
Battery	
Type:	Li-polymer
Speech time:	20 h under optimal conditions 13 h with Bluetooth headset in use under optimal conditions
Stand-by time:	120 h[1] under optimal conditions
Charge time:	< 4 hours
Discharge/charge cycles:	>=80% capacity left after 400 full charge/discharge cycles.
[1] The stand-by time is without activated screensaver	
Connectors	
Multi-purpose connector:	For battery charging, software download, and configuration
Headset connector:	Standard 2.5 mm
User interface	
Display (w × h):	Multiple colours with high resolution, more than 65k individual colours. 128 × 160 pixel LCD with white LED back-light
Indicator:	LED on top/front for visual indication of incoming call, message. The LED may also be used for visual indication of normal function.
Vibrator:	Incoming call/message

Keypad:	• Soft keys (3) • Hook off • On hook and Power On/Off (Symbol) on the same key • Five way navigation key (“OK” in the centre of key) • Numerical keys • Volume up/down • Multifunction button
Audio	
Ring signal:	Adjustable in 8 steps
Earpiece:	Adjustable in 8 steps of 3dB each
Maximum sound ring signal level:	88 dBA @ 10 Communication Manager
Loudspeaker:	Duplex loud speaking function
Settings	
Languages:	19 (Czech, Danish, Dutch, English, Finnish, French, German, Greek, Hungarian, Italian, Norwegian, Polish, Portuguese (Brazilian), Portuguese, Russian, Slovakian, Spanish, Swedish, and Turkish).
Central Phonebook	
Maximum name and number length:	40 characters in a name and 20 digits in a number
Company Phonebook	
Maximum name and number length:	24 characters in a name and 24 digits in a number (1 number per name).
Entries:	1000
Local Phonebook	
Storage of contacts:	• 250 contacts • 48 character name • 24 digit work number • 24 digit mobile phone number • 24 digit other number • A selectable ring tone
Telephony	
Indication:	14 ring signals, flashing LED and vibrator.
Answer call:	Button press or auto answer

Call list storage capacity:	25 received, dialled and missed calls with time stamp
Messaging	
Maximum message length:	160 characters
Storage capacity:	30 received/sent messages (> 20 000 characters)
Radio	
Receiver sensitivity:	-93 dBm
Automatic DECT protocol detection:	Automatic detection and configuration for US DECT and EU DECT at first registration.
Frequency range: • EU: • US: • LA: • BR:	 1880-1900 MHz 1920-1930 MHz 1910-1930 MHz 1910-1920 MHz
Modulation:	GFSK
Channel spacing:	1.728 MHz
Antenna:	Integral
Sensitivity:	-93 dBm
Radiated power:	EU: 250 mW US: 100 mW
Environmental	
Operating temperature:	0°C to +40°C
Storage temperature:[2]	-20°C to +60°C
Enclosure protection:	IP44, IEC EN60529
Immunity to electromagnetic fields:	3V/m EN61000-4-3
Immunity to ESD:	4 kV contact discharge and 8 kV air discharge (EN61000-4-2)
Free fall test, standard product:	IEC 60068-2-32, procedure 1, dropped 12 times from 1 metre. Ascom approves 12 drops from 1.5 metre.
Option	
Bluetooth radio: Radio spectrum:	add-on from factory ISM 2.4000-2.4835 MHz

Accessories	
• Leather case • Swivel type clip • Security chain • Basic charger • Advanced Charger • Multiple Battery Charger • Rackmount Charger • Avaya In-Building Wireless Server (AIWS) • Portable Device Manager (PDM)	• verified Bluetooth Headset Jabra BT8010 Motorola H350 Motorola H670 Nokia BH-201 Nokia BH-804 Nokia BH-904 Peltor M2RX7-WS4 Plantronics Voyager510 Plantronics Voyager520 Plantronics Voyager835 Plantronics Explorer390 Plantronics Explorer665 Samsung WEP410 SonyEricsson HBH-PV702 SonyEricsson HBH-GV435 SonyEricsson HBH-PV740 SonyEricsson HBH-IV835
[2] Note that storing Li-Ion batteries at high temperature dramatically reduces its capacity. For example storage around maximum temperature reduces capacity with 20% in less than a month, permanently.	
Compliance to European regulations and standards	
EU directives:	1999/5/EC (R&TTE)
Product marking:	For models production date until March 2010: CE QD ID: B014317 For models since production date April 2010: CE QD ID: B016451
Radio:	EN 301 406, TBR22
Bluetooth:	EN 300 328-2, EN 301489-17
SAR (Specific Absorption Rate):	EN50360 and EN62209-1, 0.074 W/kg (10 gram)
Safety:	EN60950-1
EMC:	EN301489- 6, EN 301 489-1

Compliance to US regulations and standards	
Product marking:	FCC ID: BXZDH4 For models production date until March 2010: QD ID: B014317 For models since production date April 2010: QD ID: B016451 US: 9FVW4NANDH4 HAC
SAR (Specific Absorption Rate):	FCC/OET Bulletin 65 Supplement C and IEEE Std. 1528 / ANSI/IEEE Std. C95.1 Normal operation 0.104 W/kg (1 gram) Body worn operation 0.029 W/kg (1 gram)
Safety:	UL 60950-1
EMC/Radio:	FCC Part 15 D, and FCC Part 15 C (Bluetooth)
Hearing Aid:	47 CFR Part 68, Subpart D and TIA-968-A
Compliance to Canadian regulations and standards	
Product marking:	IC:3724B-DH4 For models production date until March 2010: QD ID: B014317 For models since production date April 2010: QD ID: B016451
EMC/Radio:	RSS-213 and RSS-210 (Bluetooth), ICES-03
SAR (Specific Absorption Rate):	IEEE Std C95.3 Normal operation 0.104 W/kg (1 gram) Body worn operation 0.029 W/kg (1 gram)
Safety:	CSA 60950-1
Hearing aid:	CS-03
Compliance to Australian regulations and standards	
Product marking:	For models production date until March 2010: QD ID: B014317 For models since production date April 2010: QD ID: B016451
Radio:	EN301406

Bluetooth:	EN 300 328-2, EN 301489-17, AUS/NZS-4771
SAR (Specific Absorption Rate):	EN 50360 and EN62209-1, 0.074 W/kg (10 gram)
Safety:	AUS/NZS 60950-1
EMC:	EN301489- 6, EN 301 489-1
DECT:	AS/ACIF 5004, TS028

Avaya 3720 DECT Telephone

Physical	
Dimension (l × w × d):	133 × 53 × 24 mm
Weight:	115 g (battery and clip included)
Material:	Case: PC/ABS, Key pad: Silicone, Clip: PC
Colour:	Grey
Display (w × h):	28 x 35 mm, FSTN B/W
Clip:	Hinge type (standard) or swivel type
Battery and charging	
Type:	600 mAh (Li-Ion)
Speech time:	16 h during optimal condition
Stand-by time:	180 h during optimal condition
Charge time:	< 4 h
Discharge/charge cycles:	≥ 65% capacity left after 500 full charge/discharge cycles.
Connectors	
Multi-purpose connector:	For battery charging, software download, and configuration
Headset connector:	Standard 2.5 mm
User interface	
Display (w × h):	112 x 115 pixels, with white LED back-light.
Indicator:	LED on top/front for visual indication of incoming call. The LED may also be used for visual indication of normal function.
Vibrator:	Incoming call
Keypad:	• Soft keys • Hook off • On hook and Power On/Off on the same key • Four way navigation key • Numerical keys
Audio	

Ring signal:	Adjustable in 8 steps
Earpiece:	Adjustable in 8 steps of 3dB each
Maximum sound pressure level:	88 dBA @ 10 Communication Manager
Loudspeaker:	Duplex loud speaking function
Settings	
Languages:	6 (English, French, German, Italian, Russian, Spanish) and 13 downloadable
Central Phonebook	
Maximum name and number length:	40 characters in a name and 20 digits in a number
Company Phonebook	
Maximum name and number length:	24 characters in a name and 24 digits in a number (1 number per name).
Entries:	1000
Local Phonebook	
Storage of contacts:	• 250 contacts • 48 character name • 24 digit work number • 24 digit mobile phone number • 24 digit other numbers
Telephony	
Indication:	14 ring signals, flashing LED and vibrator.
Answer call options:	Button press or auto answer
Call list storage capacity:	25 received, dialled and missed calls with time stamp
Radio	
Automatic DECT protocol detection:	Automatic detection and configuration for US DECT and EU DECT at first registration.
Frequency range: • EU: • US: • LA: • BR	 1880-1900 MHz 1920-1930 MHz 1910-1930 MHz 1910-1920 MHz

Modulation:	GFSK
Channel spacing:	1.728 MHz
Antenna:	Integral
Sensitivity:	-93 dBm
Radiated power:	EU: 250 mW US: 100 mW
Environmental	
Operating temperature:	0°C to +40°C
Storage temperature:[1]	-20°C to +60°C
Enclosure protection:	IP40, IEC EN60529
Immunity to electromagnetic fields:	3 V/m EN61000-4-3
Immunity to ESD:	4 kV contact discharge and 8 kV air discharge (EN61000-4-2)
Free fall test, standard product:	IEC 60068-2-32, procedure 1, dropped 12 times from 1 metre.
Accessories	
• Leather case • Hinge type clip • Basic charger • Advanced Charger • Rackmount Charger • Telephone lanyard • Avaya In-Building Wireless Server (AIWS) • Portable Device Manager (PDM)	
[1] Note that storing Li-Ion batteries at high temperature dramatically reduces its capacity. For example storage around maximum temperature reduces capacity with 20% in less than a month, permanently.	
Compliance to European regulations and standards	
EU directives:	1999/5/EC (R&TTE)
Product marking:	CE
DECT Radio:	EN 301 406, TBR22
SAR (Specific Absorption Rate):	EN50360 and EN62209-1, 0.075 W/kg (10 gram)
Safety:	EN60950-1

EMC:	EN301489- 6, EN 301 489-1
Compliance to US regulations and standards	
Product marking:	FCC ID: BXZDH3 US: 9FVW4NANDH3 HAC
SAR (Specific Absorption Rate):	FCC/OET Bulletin 65 Supplement C and IEEE Std. 1528 / ANSI/IEEE Std. C95.1 Normal operation 0.043 W/kg (1 gram) Body worn operation 0.037 W/kg (1 gram)
Safety:	UL 60950-1
EMC/Radio:	FCC Part 15 D
Hearing aid:	47 CFR Part 68, Subpart D and TIA-968-A
Compliance to Canadian regulations and standards	
Product marking:	IC:3724B-DH3
SAR (Specific Absorption Rate):	IEEE Std C95.3 Normal operation 0.043 W/kg (1 gram) Body worn operation 0.037 W/kg (1 gram)
Safety:	CSA 60950-1
EMC/Radio:	RSS 213, ICES-03
Hearing aid:	CS-03
Compliance to Australian regulations and standards	
Product marking:	
Radio:	EN301 406
SAR (Specific Absorption Rate):	EN50360 and EN62209-1, 0.075 W/kg (10 gram)
Safety:	AS/NZS 60950
EMC:	EN301 489-1 and EN301 489-6
DECT:	AS/ACIF S004

Advanced Charger

Physical	
Dimensions (l × w × h):	130 × 98 × 55 mm
Weight:	160 g (excl. power adapter)
Material:	Case: PC/ABS Rubber feet
Colour:	Charcoal grey
Functional	
Supply voltage:	100 - 240 V, 50 - 60 Hz AC (adapter), 5 V DC (charger)
Charge current:	0.65 A
Interfaces	
USB:	USB specification 2.0 full speed
Ethernet:	Support data transfer rates up to 100Mbps (IEEE802.3 standard)
Environmental	
Operating temperature:	+5°C to +40°C
Storage temperature:	-20°C to +65°C
Enclosure protection:	IP30, IEC EN60529
Immunity to electromagnetic fields:	3 V/m EN61000-4-3
Immunity to ESD:	4 kV contact discharge and 8 kV air discharge (EN61000-4-2)
Compliance to European regulations and standards	
EU directives:	2004/108/EC(EMC)
Product marking:	CE
Safety:	EN60950-1
EMC:	EN 55022 (class B), EN61000-4-3
Compliance to US regulations and standards	
Product marking:	c SP us

Safety:	UL 60950-1
EMC:	FCC CFR 47 Part 15
Compliance to Canadian regulations and standards	
Product marking:	
Safety:	CSA 60950-1
EMC:	FCC CFR 47 Part 15
Compliance to Australian regulations and standards	
Product marking:	
Safety:	IEC 60950-1
EMC:	EN 55022 (class B), EN61000-4-3

Basic Charger

Physical	
Dimensions (l × w × h):	95 × 95 × 55 mm
Weight:	170 g (excl. power adapter)
Material:	Case: PC/ABS Rubber feet
Colour:	Charcoal grey
Functional	
Supply voltage:	100 - 240 V, 50 - 60 Hz AC (adapter), 5 V DC (charger)
Charge current:	0.65 A
Environmental	
Operating temperature:	+5°C to +40°C
Storage temperature:	-20°C to +65°C
Enclosure protection:	IP30, IEC EN60529
Immunity to electromagnetic fields:	3 V/m EN61000-4-3
Immunity to ESD:	4 kV contact discharge and 8 kV air discharge (EN61000-4-2)
Compliance to European regulations and standards	
EU directives:	2004/108/EC(EMC)
Product marking:	CE
Safety:	EN60950-1
EMC:	EN 55022 (class B), EN61000-4-3
Compliance to US regulations and standards	
Product marking:	c SP us
Safety:	UL 60950-1
EMC:	FCC CFR 47 Part 15
Compliance to Canadian regulations and standards	
Product marking:	c SP us

Safety:	CSA 60950-1
EMC:	FCC CFR 47 Part 15
Compliance to Australian regulations and standards	
Product marking:	
Safety:	IEC 60950-1
EMC:	EN 55022 (class B), EN61000-4-3

Multiple Battery Charger

Physical	
Dimensions (l × w × h):	453 × 156 × 98 mm
Weight:	1,4 kg
Material:	Case: PC/ABS
Colour:	Light grey
Functional	
Supply voltage:	100 - 240 VAC/0,7 A, 50/60 Hz
Charge current:	0.65 A
Environmental	
Operating temperature:	+5°C to +40°C
Storage temperature:	-20°C to +65°C
Enclosure protection:	IP30, IEC EN60529
Immunity to electromagnetic fields:	3 V/m EN61000-4-3
Immunity to ESD:	4 kV contact discharge and 8 kV air discharge (EN61000-4-2)
Recommended cables	
(not supplied by Avaya)	Power cord with IEC C13 connector
Compliance to European regulations and standards	
EU directives:	2004/108/EC(EMC)
Product marking:	CE
Safety:	EN60950-1
EMC:	EN 55022 (class B), EN61000-4-3
Compliance to US regulations and standards	
Product marking:	c SP us

Safety:	UL 60950-1
EMC:	FCC CFR 47 Part 15
Compliance to Canadian regulations and standards	
Product marking:	
Safety:	CSA 60950-1
EMC:	FCC CFR 47 Part 15
Compliance to Australian regulations and standards	
Product marking:	
Safety:	IEC 60950-1
EMC:	EN 55022 (class B), EN61000-4-3

Rackmount Charger

Physical	
Dimensions (l × w × h):	453 × 156 × 98 mm
Weight:	1,6 kg
Material:	Case: PC/ABS
Colour:	Light grey
Functional	
Supply voltage:	100 - 240 VAC/0,7 A, 50/60 Hz
Charge current:	0.65 A
Interfaces	
Ethernet:	Support data transfer rates up to 100 Mbps (IEEE 802.3y standard)
USB:	USB specification 2.0 full speed
Recommended cables	
(not supplied by Avaya)	Power cord with IEC C13 connector
Environmental	
Operating temperature:	+5°C to +40°C
Storage temperature:	-20°C to +65°C
Enclosure protection:	IP30, IEC EN60529
Immunity to electromagnetic fields:	3 V/m EN61000-4-3
Immunity to ESD:	4 kV contact discharge and 8 kV air discharge (EN61000-4-2)
Compliance to European regulations and standards	
EU directives:	2004/108/EC(EMC)
Product marking:	CE
Safety:	EN60950-1
EMC:	EN 55022 (class B), EN61000-4-3
Compliance to US regulations and standards	

Product marking:	
Safety:	UL 60950-1
EMC:	FCC CFR 47 Part 15
Compliance to Canadian regulations and standards	
Product marking:	
Safety:	CSA 60950-1
EMC:	FCC CFR 47 Part 15
Compliance to Australian regulations and standards	
Product marking:	
Safety:	IEC 60950-1
EMC:	EN 55022 (class B), EN61000-4-3

Portable Device Manager (PDM)

PC Requirements	
PDM Installation and operation:	Windows XP® Professional, Service Pack 2 (SP2) or Windows Vista® Business operating system Sun Java Runtime Environment (JRE) 6 or later Acrobat Reader 5.0 or higher.
Available hard disk space:	200 MB (recommended)
Language	
Operational GUI:	English as default.

Avaya In-Building Wireless Server (AIWS)

Hardware Requirements	
Elise 2 Server (AIWS Hardware) / 64 MB RAM / 1 GB FLASH	
Hardware	
Elise 2 Server (AIWS Hardware)	For information on ELISE2 hardware, see *Installing Elise 2 Server (AIWS Hardware)* on page 421
PC Requirements	
Installation and administration:	Microsoft Internet Explorer 6.0™ or later Sun Java Runtime Environment (JRE) 6 or later.
Screen resolution:	1024 x 768 pixels
Languages	
Installation GUI:	English only
Operational GUI:	English as standard, translations can be added
Items	
WSM-MVB	AIWS Basic, including Elise 2 Server (AIWS Hardware), power supply and licence
WSM-MVC	AIWS Basic+, including Elise 2 Server (AIWS Hardware), power supply and licence
WSM-MVS	AIWS Standard, including Elise 2 Server (AIWS Hardware), power supply and licence
WSM-MVP	AIWS OAP, including Elise 2 Server (AIWS Hardware), power supply and licence
WSM-MVE	AIWS Enterprise Management, including Elise 2 Server (AIWS Hardware), power supply and licence
Included accessories	
Power Supply	AC cord for EU, UK, US, Australia
Build-inCentral Phonebook	
Number of entries:	500 (editable) or 2000 (view only), csv format import and export

External Central Phonebook	
Supported protocols:	LDAP
Supported LDAP servers:	Active Directory® in Windows 2000 Server Active Directory® in Windows Server 2003 Cisco Call Manager 4.2
Time Synchronisation	
Time server ability:	Yes
Automatic daylight saving adjustment:	Yes
Date and time format:	Adjustable to commonly used formats
Time sources:	NTP server (NTPv4 compatible with NTPv2 and NTPv3) Other Unite module with time server ability Manual setting
Messaging	
IP-DECT	Max capacity: 4 000 messages / hour
Supported special characters:	Swedish, Norwegian, Danish, Finnish and German language
Supported Telephone Systems	
DECT	IP-DECT

Variants

Avaya AIWS Basic	
Build-in Central Phonebook	
SMS Handset to Handset	
Basic Web Messaging	
Telephone configuration via Advanced Charger or Rackmount Charger or OTA [1] => max 32 devices	
This licence cannot be used in a multi AIWS configuration.	
Avaya AIWS Basic+[2]	
Build-in Central Phonebook	
SMS Handset to Handset	
Basic Web Messaging	
Software download via Advanced Charger or Rackmount Charger or OTA => max 32 devices	
Telephone configuration via Advanced Charger or Rackmount Charger or OTA => max 32 devices	
Avaya AIWS Standard[3]	
Build-in Central Phonebook	
Access to Corporate LDAP Directories for phonebook enquiries	
SMS Handset to Handset	
Advanced Web Messaging	
Max. No. of predefined messages:	30 common messages, max. 20 kB in total 30 local messages, max. 4 kB in total[4]
Software download via Advanced Charger or Rackmount Charger or OTA	Max. 120 devices

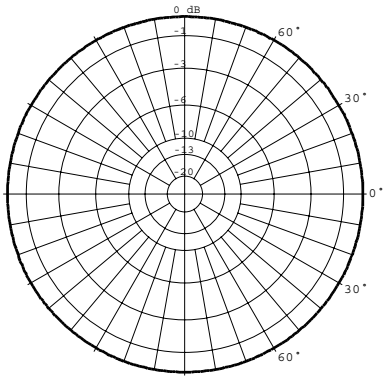
Telephone configuration via Advanced Charger or Rackmount Charger or OTA	Max. 120 devices
Avaya AIWS OAP[3]	
Build-in Central Phonebook	
SMS Handset to Handset	
Basic Web Messaging	
Messaging protocols	OAP
Avaya AIWS Enterprise Management[3]	
Build-in Central Phonebook	
SMS Handset to Handset	
Basic Web Messaging	
Software download via Advanced Charger or Rackmount Charger or OTA	Max. 1 000 devices
Telephone configuration via Advanced Charger or Rackmount Charger or OTA	Max. 1 000 devices

1. only with AIWS SW release above 2.32
2. multi AIWS configuration supported (same as in Avaya AIWS Standard)
3. AIWS Standard, OAP and Enterprise Management can be combined in the same system
4. Cookies have to be enabled.

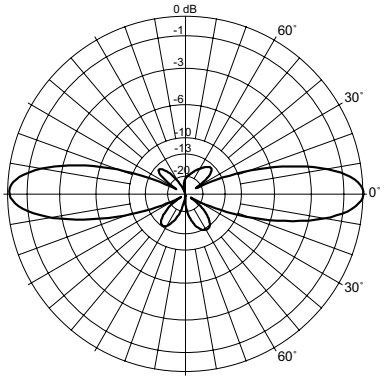
Omnidirectional single antenna

General	
Manufacturer:	MAT Equipment
Product code manufacturer:	MA430X14
Physical	
Height:	375 mm (above wall mounting bracket
Weight:	≈ 0.2 kg (excl. pole mounting bracked of 70 grams)
Mounting stand-off:	71 mm (wall to back of antenna)
Weight	≈ 0.82 kg
Material/colour:	shroud: glass fiber, greyupper cap: plastic, black base: plastic, blackwall bracket: glass fiber, greypole mounting clamp: stainless steel
Environmental	
Operating temperature:	-33 to +55 °C:
Functional Specs	
Frequency	range 1880 to 1920 MHz
Nominal impedance:	50 ohms
VSWR:	≤ 1.7
Polarization:	linear, vertical
Gain (at connector level):	4.8 dBi ± 0.3 dBi
Radiation in horizontal plane:	omnidirectional within ± 0.3 dB
Radiation in vertical plane:	beam width (E-plane) at -3 dB: ≈ 24°
Maximum power:	10 watts
Connector:	MCX male connector at the end of a 1 m
	RG316 coaxial cable (minimum bending radius: 20 mm)

Radiation pattern



Typical radiation in horizontal plane

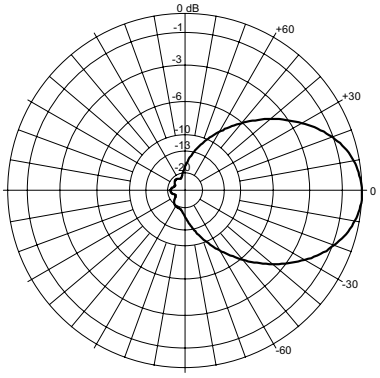


Typical radiation in vertical plane

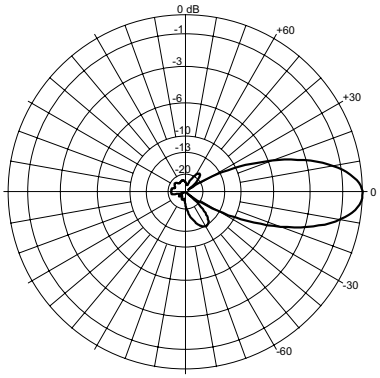
Directional dual antenna

General	
Manufacturer:	Huber+Suhner
Product code manufacturer:	SPA 1900/85/8/0/DS
Physical	
Size:	101(h) × 95(w) × 32(d) mm
Weight:	0.11 kg
Material/colour:	housing: ASA and aluminium,
	light grey RAL 7035
	radome: ASA, dark grey RAL7042
Environmental	
Operating and storage temperature:	-40 to +80 °C
Functional Specs	
Frequency range:	1850 to 1990 MHz
Nominal impedance:	50 ohms
VSWR:	1.5
Polarization:	dual linear, ± 45° slant
Gain:	8 dBi
Radiation in horizontal plane:	beam width (H-plane) at -3 dB: 85°
Radiation in vertical plane:	beam width (E-plane) at -3 dB: 75°
Down tilt:	0°
Front to back ratio:	12 dB
Isolation between ports:	30 dB
Maximum power:	75 watts (CW) at 25 °C
Connector:	MCX male connector at the end of a 1 m
	ENVIROFLEX 316D coaxial cable

Radiation pattern



Typical radiation in horizontal plane



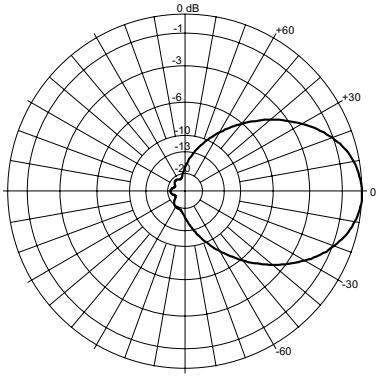
Typical radiation in vertical plane

Directional single antenna

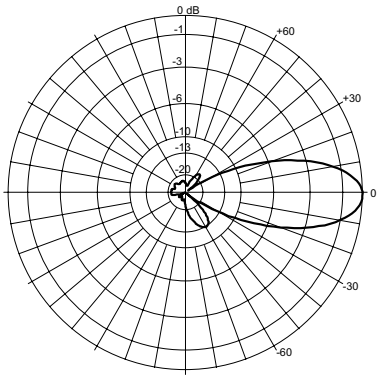
General	
Manufacturer:	MAT Equipment
Product code manufacturer:	MA420X44
Physical	
Size (h × w × th):	270(w) × 140(h) × 35 mm (panel thickness)
Mounting stand-off:	71 mm (wall to back of antenna)
Weight	≈ 0.82 kg
Material/colour:	
	shroud: UV-resistant plastic, grey RAL 7035
	bracket: aluminium and zamak
Environmental	
Operating temperature:	-33 to +55 °C
Functional Specs	
Frequency	range 1880 to 1920 MHz
Nominal impedance:	50 ohms
VSWR:	≤ 1.6
Polarization:	linear, vertical
Gain (at connector level):	9.5 dBi ± 0.3 dBi
Radiation in horizontal plane:	beam width (H-plane) at -3 dB: ≈ 69°
Radiation in vertical plane:	beam width (E-plane) at -3 dB: ≈ 31°
Maximum power:	10 watts
Connector:	MCX male connector at the end of a 1 m
	RG316 coaxial cable (minimum bending radius: 20 mm)

Orientation capability:	± 45° in azimuth (horizontal plane)± 15° in
	elevation (vertical plane)

Radiation pattern



Typical radiation in horizontal plane



Typical radiation in vertical plane

Outdoor housing DECT base stations

Physical	
Dimension:	389 (w) x 170 (d) x 440 (h) mm
Weight:	5 kilogram (base station not included)
Material:	glass fibre reinforced polyester
Colour:	grey (RAL 7036)
Environmental	
Check the environmental conditions of the base station to be used. Follow these conditions.	
Branding	Not branded
Compliance to regulations and standards	
Electrical safety:	IP66 according to IEC 529
Approvals: UL, CSA and Australian	UL, CSA and Australian
Optional Pole mounting set (can be ordered seperately)	
Dimension:	The flexible mounting strip enables mounting on a pole with a circumference up to 750 mm.
Material:	stainless steel, aluminium and zinc plated metal
Weight:	ca. 1.5 kilogram

Troubleshooting

Introduction

This chapter provides steps to follow in the event of a failure of one of the following devices:

- IP-DECT Base Station (IPBS)
- Avaya 3720/3725 DECT Telephones
- Advanced Charger
- Multiple Battery Charger
- Rackmount Charger
- Portable Device Manager (PDM)
- Avaya In-Building Wireless Server (AIWS)

IP-DECT Base Station (IPBS)

The IPBS is unreachable by web GUI

If the firmware is corrupt, for example if firmware download is interrupted the IPBS could become unreachable by the web GUI. It will not be possible to load new firmware or to start correctly. If this occurs, the IPBS runs on the bootcode and the Gwload tool (a tftp-style client used to repair a broken firmware) can be used to upload firmware.

1. Download the Gwload software from the IP-DECT system provider.
2. Set the IPBS in TFTP-mode by performing a medium (~3 sec) hardware reset, see Reset Using the Reset Button on page 136.
3. Start a command window.

   To update with new firmware, execute the following command from the folder where the **`gwload.exe`** file is located:

   IPBS:
   `gwload /setip /i <ipaddress> /gwtype 1201 /prot <..path/firmwarefilename> /go`
4. If there is more than one IPBS in TFTP mode, select the unit to update and press enter.

Issues by using VLANs for connecting IPBS to the network

In an IP-DECT system all IPBS (using the same Master) need to be in the same VLAN and need to use the same VLAN-ID. Check for LAN > VLAN configuration in the IPBS web interface.

The switches the IPBS are connected to need to have the VLAN tagging mode enabled (e.g. dot1q) for the used ports.

Roaming between different IPBS masters of same IP DECT system not working

The coverage areas of the IPBS masters must not overlap. Otherwise roaming will not work properly. Due to the effects of overlap, the handset may sometimes not receive SMS. Also over the air, administration will sometimes not work. Finally, the handset sometimes cannot receive calls or make calls.

Fault Code Descriptions

This section lists the possible fault codes and their descriptions.

Description	Code	Device
RFP disconnected	0x000e0001	IPBS
RFP malfunctioning	0x000e0002	IPBS
RFP disabled	0x000e0003	IPBS

RFP software download failed	0x000e0004	IPBS
RFP unsynchronized	0x000e0005	IPBS
Synchronization to alien system lost	0x000e0006	IPBS
Backup synchronization master active	0x000e0007	IPBS
Other DECT system with same sysid detected	0x000e0008	IPBS
Standby Master is active	0x00030001	IPBS
Connection to Radio lost (from Master)	0x00030204	IPBS
Connection to Master lost (from MM)	0x00030303	IPBS
User registration failure	0x00030002	IPBS
Unexpected restart (watchdog/reset/power on)	0x000b0001	IPBS
Memory low (90%)	0x00120001	IPBS
Emergency registration down (Master)	0x00030003	IPBS
No Media Data received (RTP)	0x00050001	IPBS
Excessive loss of data (RTP)	0x00050002	IPBS
Wrong Payload Type received (RTP)	0x00050003	IPBS
Stun failed (RTP)	0x00050004	IPBS
SRTP authentication failed (RTP)	0x00050005	IPBS
SRTCP authentication failed (RTP)	0x00050006	IPBS
Unexpected Message (H323)	0x00060001	IPBS
Status Inquiry (H323)	0x00060002	IPBS
Certificate validation is disabled until system time is set	0x000c1000	IPBS
Interface down	0x00110000	IPBS
Interface not configured	0x00110001	IPBS
DHCP server not responding	0x00110002	IPBS
Invalid UDP-RTP port base/range	0x00110019	IPBS
Invalid UDP-NAT port base/range	0x0011001a	IPBS
Invalid NAT port base/range	0x0011001b	IPBS

Checksum error	0x00110040	IPBS
ARP poisoning detected	0x00110041	IPBS
Out of TCP/NAT ports	0x00110046	IPBS
Out of TCP ports	0x00110047	IPBS
TCP checksum error	0x00110048	IPBS
TCP bind error	0x00110049	IPBS
Out of UDP/RTP ports	0x00110050	IPBS
Out of UDP ports	0x00110051	IPBS
UDP checksum error	0x00110052	IPBS
UDP bind error	0x00110053	IPBS
No route to destination	0x0011005a	IPBS
No route to destination, if down	0x0011005b	IPBS
No route to destination, if unknown	0x0011005c	IPBS
No route to destination, if unconfigured	0x0011005d	IPBS
No route to destination, loop	0x0011005f	IPBS

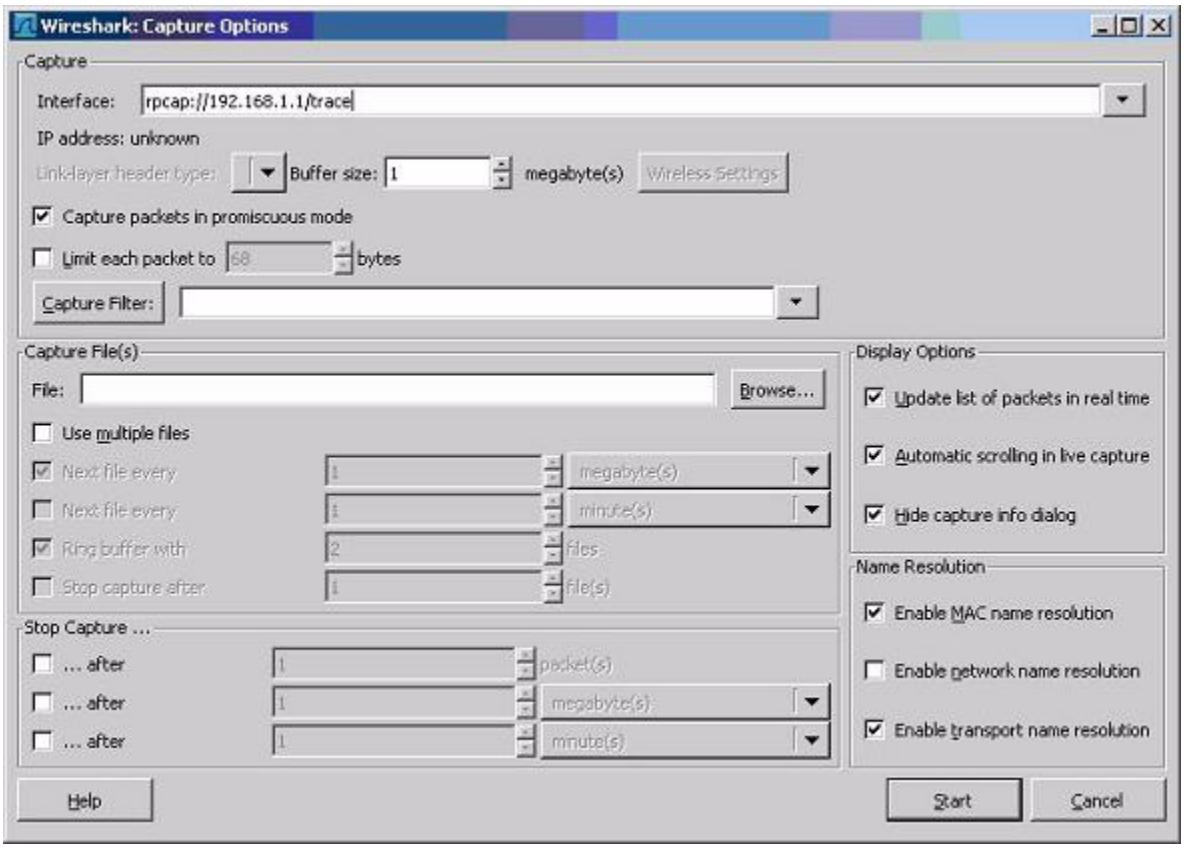
Remote LAN sniffer traces

The IPBS offers the ability to do remote LAN sniffer traces. The IPBS offers a PCAP interface that can be connected by LAN sniffer tools like Wireshark.

1. Go to **Diagnostics** > **Traces**.
2. In the **IP** section, select the **TCP/UDP Traffic** check box.
3. In the **Remote PCAP** section, select the **Enable** check box to enable the Remote PCAP interface.

Now the Remote PCAP interface “rpcap://xxx.xxx.xxx.xxx/trace” can be used in your wireshark tool to connect to the IP interface.

Figure 183: Remote LAN sniffer traces



Avaya 3720/3725 DECT Telephones

This section contains information on how to solve common operational problems, and warnings you may receive.

Go through the following lists if you encounter any problems.

Fault Symptoms

If any of the following Fault Symptoms occur, follow the instructions below.

Fault	Probable cause	Action or comment
The display stays dark	Low battery level or faulty telephone.	Charge the battery. If the telephone does not work after charging it is defective.
There is no ring signal	**Sound off** or **Ring volume silent** icon is on, or faulty telephone.	Press and hold the Mute key, or increase volume (**Settings** > **Sound & Alerts** > **Volume**).
The Call list entries of the 3720 are deleted.	The battery was changed.	No fault. Normal behaviour of 3720 after battery change.
Time stamp of Call log entries is wrong	*On DECT R4 systems:* Date and time info was not sent by IPBS. *On ADMM systems:* Date and time are not (correctly) set	Switch telephone off and on again. Set date/time manually in menu **Settings** > **Time/Date**.
Some menu items are not shown in the set language	Locally configured menu items are made in another language.	No fault. Locally by the administrator configured entries will not be translated when the language is changed.
While in charger the telephone will shut down again immediately when it is switched on.	Switch off while in charger is activated.	Change setting in menu **Connections** > **In charger**.

Phone cannot make or receive calls

- Check trunk configuration in IPBS master and Communication Manager (IP-Addresses and ports need to match).

- Check status station on Communication Manager if already in off hook state. Make a call to the station and check status station on Communication Manager again. I this does not work, remove station on Communication Manager and configure again.

Feature access codes do not work

It might be that feature access codes do not work even if they are sent manually or preprogrammed in the **In call** menu, **Call service** menu or **My favorites**. One option is to enter the R-key before sending the feature access code, e.g. "*05". If it is preprogrammed, you need to add the "R" in the value field for the feature, e.g. "R*05".

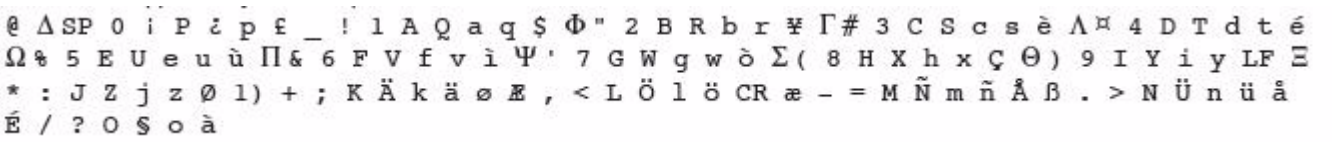
Handset cannot receive SMS and Centralized Phonebook access to LDAP directory does not work

In the IP DECT system, the user ID of the handset, **Menu** > **Settings** > **device info** > **User ID**, needs to be the extension number of the handset. The user ID can be configured by AIWS Device Manager or WinPDM. Navigate to the **Numbers** tab, select the device, and select **number - rename**. Change the number to the extension number of the handset.

Some characters will not be sent via SMS or the Send option does not work at the handset

For SMS, only the following characters will be supported by the SMS protocol:

Figure 184: SMS Characters



Handset restarts continuously when the handset moved away from the connected system

This is currently a limitation in the software. The problem occurs if the handset is subscribed to IP-DECT/other (GAP) *and* Integral Enterprise or Integral 5 systems at the same time and **Change system** is set to **Automatically**.

Workaround: After a restart the handset will start to search for a system. Go immediately to menu **Connections > System > Change system**. Select one of the systems in the list that you currently like to use. Make sure **Automatically** is *not* selected.

Centralized phone book search fails when using LDAP

It was observed when entering a blank in between the first name or the last name input field that there was no or faulty search results. Unfortunately a blank in the search string is internally used as a delimiter between first name and last name. E.g. if "Klaus Dieter" is entered as the first name and "Müller" as last name the LDAP request will search for "Klaus" as first name and "Dieter" as last name.

Handset shows “no access” but calls are possible

This issue could occur if the IPBS, with which the handset is currently connected, is disconnected from power and the IP network. In such situation, the handset roams to another IPBS of the same IP-DECT system, but the roaming to the new base station is incomplete from the IP-DECT system point of view (because the "old" IPBS doesn't answer anymore). The new IPBS will block the location registration for about 5 to10 minutes. So the handset will show “no access” for this time period. However, calls will be possible on this handset even if the location registration was not accepted by the new IPBS.

Display Information

The following error messages can be shown in the telephone display:

Display shows	Probable cause	Action or comment
No access	The telephone is in range, but has no access rights.	Switch off the telephone and then switch it on again. If this does not work, the subscription data for this extension in the IPBS Master might be deleted.
No System. The telephone beeps once a minute with a low tone followed by a high tone (during max 30 minutes). If the vibrator is enabled, it vibrates after the last beep.	The telephone is out of coverage, or faulty telephone.	The beeps can be stopped with the mute button. **Note**: When re-entering the coverage area it can take a couple of minutes before the telephone automatically has registered into the system.
Name and number information of the other party not correctly shown in the display during a call	Wrong display format configured in Communication Manager.	Go to Communication Manager station form and check if "length of display" is configured to "16x2".
System busy	The IPBS you are connected to has reached its limited number of active calls.	Change place to get connected to the next available IPBS.
SERVICE NEEDED Parameters corrupt **Note:** This display message is only shown in English.	Faulty telephone.	Select the reset option on the middle soft key if available. Upgrade the telephone’s software to version 3.0.0 or greater If the problem persists send the telephone for service.

Display shows	Probable cause	Action or comment
PBX out of service	1. Handset can't do calls. Trunk configuration in IPBS Master is faulty or configured trunk on Communication Manager is down	1. Change trunk configuration on IPBS Master > DECT > trunk, use same ports on IPBS Master and Communication Manager side (both directions). Make sure that the port on the Communication Manager side is exclusively used by this signaling group.
	2. Handset can do calls and trunk IPBS Master is active, check on IPBS Master > Dect > trunk	2. Busy out the configured signaling group on the Communication Manager side, wait until trunk in IPBS Master is down, release signaling group on Communication Manager side, trunk on IPBS Master comes back to active, "PBX out of service" disappears on handset display.
Enter PIN code	Phone lock is activated.	Enter the required PIN code. If the PIN code has been lost, enter a new PIN code via PDM/AIWS.
Battery low, charge now	The battery level is low.	3725: Charge the telephone, or replace or charge the battery. 3720: Charge the battery while the battery is inserted in the telephone, or replace the battery.
Central phonebook is not available at the moment.	The Central phonebook does not respond or is not activated.	Verify Central phonebook configuration in the AIWS.

Display shows	Probable cause	Action or comment
Voice mail number not defined	There is no Voice mail number defined in the telephone.	Define a Voice mail number via the PDM/AIWS: Systems >System A > PBX Settings > Numbers.
Could not encrypt connection	The parameter "Encryption Required" is enabled in the telephone in combination with: 1. Unencrypted base station(s); and/or, 2. Unsupported base station(s).	1. Disable the "Encryption Required" parameter in telephone; and/or, 2. Enable the encryption in the base station(s); and/or, **Note:** If Ascom's base station(s) is used, the software version must be 3.1.x or greater. 3. Use supported base station(s). Ask your supplier.

LED Error Indications

See chapter LED indications on page 172.

LED is flashing red, quick flash, (100 ms on, 800 ms off)

- If a third telephone, that is an other telephone than the "old" and "new" telephone mentioned in Definitions on page 152, is inserted into the charger during Easy Replacement, this error indication appears. Change to the correct telephone.
- The charger has found that Easy Replacement does not work. Change back to the "new" telephone.

LED is flashing red, long flash (800 ms on, 100 ms off)

Error during Easy Replacement. *Both* telephones need to be sent for service.

Advanced Charger

For general LED indications, see also LED indications on page 204.

Status LED on the charger is not lit.

Check that power is supplied.

If power is supplied and the status LED is still not lit, the probable cause is a software error. Send charger for service.

Status LED on the charger is fixed red.

Send charger for service. Connect charger to PDM via USB and check if charger goes online. If yes check software version of the charger.

Status LED is flashing red for 3s, then green

A factory reset has been performed. It may be necessary to set parameters from PDM/AIWS.

Status LED is flashing red (100 ms on, 800 ms off) for more than 3s

An error occurred during Easy Replacement. Remove portable from charger.

Status LED is flashing red (800 ms on, 100 ms off) for more than 3s

If the error occurred during Easy Replacement, remove the portable from the charger. The charger should return to normal operation.

Otherwise send charger for service.

Charging does not start

Check that the telephone is properly inserted in the charger.

Advanced Charger does not appear in PDM/AIWS

Check that the communication cable (USB or Ethernet) is connected.

If charger doesn't appear in the AIWS device manager when connected via Ethernet you might have to configure the AIWS IP-address with the PDM tool (refer to Advanced Charger does not appear in AIWS on page 200).

Easy replacement does not start

Check that the handsets are of the same device type.

Check the handset software version. (refer to the configuration manual for details)

Check that the Advanced Charger software version is at least 1.3.7, see Software Update on page 202.

Multiple Battery Charger

Charging does not start

Check that the battery is properly inserted in the charger.

Check the AC power supply connection.

Rackmount Charger

For general LED indications, see also LED indications on page 237.

Status LED on the charger is not lit.

Check that power is supplied.

If power is supplied and the status LED is still not lit, the probable cause is a software error. Connect charger to PDM via USB and check if charger goes online. If yes check software version of the charger. Send charger for service.

Status LED on the charger is fixed red.

Connect charger to PDM via USB and check if charger goes online. If yes check software version of the charger. Send charger for service.

Status LED is flashing red for 3s, then green

A factory reset has been performed. It may be necessary to set parameters from PDM/AIWS.

Status LED is flashing red (100 ms on, 800 ms off) for more than 3s

An error occurred during Easy Replacement. Remove portable from charger.

Status LED is flashing red (100 ms on, 800 ms off) for more than 3s

If the error occurred during Easy Replacement, remove the portable from the charger. The charger should return to normal operation.

Otherwise send charger for service.

Charging does not start

Check that the telephone is properly inserted in the charger.

Rackmount Charger does not appear in PDM/AIWS.

Check that the communication cable (USB or Ethernet) is connected.

If charger doesn't appear in the AIWS device manager when connected via Ethernet you might have to configure the AIWS IP-address with the PDM tool (refer to Advanced Charger does not appear in AIWS on page 200).

Easy Handset Replacement doesn't start at the Rackmount Charger

Easy handset replacement is only supported in the first slot (most left) of the Rackmount Charger.

Rackmount Charger doesn't go online in the Device manager or Easy handset repleacement doesn't start

Try a software reset.To reset the Rackmount Charger, press the embedded LED on the front of the charger, for example with a pen or a screw driver.

Portable Device Manager (PDM)

When troubleshooting the PDM, it is always a good idea to examine the log files, since they provide additional information that may prove useful. When reporting an error to your supplier, always include the appropriate log file.

Log files are stored under
`C:\Documents and Settings\<user name>\Application Data\Avaya\WinPDM\log\`.
The log files are rotated every 10 MB and are time-stamped with 1 ms resolution.

The PDM does Not Start / Installation fails

To run the PDM, the computer must fulfill the requirements listed in Portable Device Manager (PDM) on page 482. If you do not have the correct software versions installed, contact your system administrator.

To install the PDM, you must have administrator rights on the computer. Contact your system administrator if you are not able to install the PDM.

Firewall issues

Windows Firewall may alert you of **PMServer**, **CuspCsi**, **UspCsi, CuspSerialCSI** and **MwpCsi**. These alerts will not affect the PDM but you can select **Continue blocking** or **Unblock** to avoid further alerts.

No Indication of connected Device

If a device does not show up in PDM, make sure the device is properly connected, or try disconnecting and reconnecting the device.

If a connected Advanced Charger or Rackmount Charger does not show up as connected in the **Devices** view, the USB port may not be configured correctly.

Open Windows **Control Panel > System**. Select the **Hardware** tab and then select **Device Manager**. If the device does not show up in the list (as a USB port), check the connection and reinstall the drivers and/or software for the device (see Software Installation on page 244).

The USB driver can also be installed separately and can be found on the PDM installation in the USB driver folder.

Software in Device Not Recognised/Synchronization Fails

A device might have software with a parameter set that is newer than the version recognised by the PDM. The PDM will then be unable to send parameters to the device. The icon (a red broken arrow) in the **Parameters** column for the selected device indicates that the synchronization between the device and the PDM was not successful.

If this is the case, the PDM should be updated with new software and definition files provided by your local supplier. See Import Parameter Definition files on page 269.

Software Upgrade Fails

Verify device is still online. Handset needs to be plugged into the Advanced Charger or Rackmount Charger. Chargers need to be connected via USB to the PC. If device is still online try to restart the software upgrade again.

Avaya In-Building Wireless Server (AIWS)

General Troubleshooting

Log files

When troubleshooting AIWS, it is always a good idea to examine the log files, since they provide additional information that may prove useful. When reporting an error to your supplier, always include the appropriate log file.

To find logs,

1. On the AIWS start page, click on **Configuration**. The **AIWS Configuration** page opens.
2. In the left pane, click on **Other settings** > **Advanced Configuration**. The **AIWS Advanced Configuration** page opens.
3. Click on **Troubleshoot**.
4. Click on **View Info Log**, **View complete Log** or **View Error Log**.

AIWS Device Manager does Not Start

To use the AIWS GUI, the computer must fulfill the requirements listed in Avaya In-Building Wireless Server (AIWS) on page 483. If you do not have the correct software versions (Java runtime environment) installed, contact your system administrator.

AIWS Device Manager does Not Start with Firefox Browser

If you are using Firefox as your default browser, you will not be able to open AIWS Device Manager. You have to set the proxy settings in the Java Control Panel manually.

1. Open the Java Control Panel.
2. Select **General** tab.
3. Press **Network settings...** button
4. Mark radiobutton **Use Proxyserver** or checkbox **Direct connection.**

   Your browser's proxy settings will be automatically copied in the text fields **Address** and **Port**.
5. Save the settings with **OK** button.

Firewall issues, or No Indication of Connected Device

If there is a firewall between AIWS and any devices, the firewall may need some configuration to allow communication.

Device Does Not Show up in AIWS Device Manager

Check if AIWS IP-Address is configured in the IPBS, see Configure Messaging on page 122.

If a connected device does not show up as connected in the Devices view, check the status of the interface. Starting up mode is indicated during start of applications or if an application has lost connection to a required resource.

On the AIWS start page, click on **Configuration**, then click on **Other settings** > **Advanced Configuration**. On the **Advanced Configuration** page, click on **Troubleshoot** on top of the page, and then **System information** in the left pane. The System Information page opens. Check system status.

Check if handset is online:

Admin Menu > Centr. Management
DECT: online -> If handset is connected over the air
Eth/USB: Online if handset is connected to the Advanced/Rack charger

Check in AIWS advanced configuration (AIWS start page - configuration - other settings - advanced configuration) in the - device management the local AIWS IP-Address 127.0.0.1/ DECT should be configured. If the IP-Address point to another AIWS in the network the devices will appear in this AIWS Device manager.

Check if Advanced/Rack charger is online

- LED on charger needs to lit green
- ping to the IP-address of the Advanced charger(check DHCP sever for IP-Address or use static IP-address if configured on the charger)

Software in Portable Not Recognised/Synchronization Fails

A device might have software with a parameter set that is newer than the version recognized by the PDM. The PDM will then be unable to send parameters to the device. An unknown parameter version will be highlighted in red letters in the Parameters column for the selected device. It indicates that the synchronization between the device and the AIWS-DeviceManager was not successful. If this is the case, the AIWS-DeviceManager should be updated with new software and definition files provided by your local supplier. See Import Parameter Definition Files on page 343.

Device Software Download Fails

Possible causes:

- Portable is out of range, turned off or is not subscribed to the system.
- The LAN is badly configured and looses packages (packet loss).
- The LAN is overloaded and looses packages (packet loss).
- The web server containing the image file is overloaded.
- Erroneous image file.
- Erroneous path to the image file.

- The web server containing the image file is incompatible with the portable (Apache, Microsoft IIS are supported by the IP-DECT system).

Get stuck while installing a new software image

After booting AIWS in image installation mode the browser is not redirected to the next page, there is a Network Error (tcp_errror) and the page was not found because the web server is not running. This is mostly observed once after a power on cycle when the internal battery of the AIWS is not activated by jumper J1, please refer to Activation of Battery *on page 442*.

- Press back on your browser to boot the AIWS in the image installation mode again. Now you should get redirected to the next page even if the battery is not active.
- Sometimes the browser try to use a secured connection to https://xxx.xxx.xxx.xxx/install what is not supported. Connect manually to **`http://xxx.xxx.xx.xx/install`** to continue the update.

Unable to access ftp area

Make sure the client is set in active mode.

Example for Internet Explorer:
In the menu, select **Tools** > **Internet Options...** > **Advanced**. Under **Browsing**, uncheck the **Use Passive FTP (for firewall and DSL modem compatibility)** checkbox.

When secure mode is enabled, see Web access security settings on page 307, only secure access via HTTPS and FTPES is allowed. HTTP is automatically redirected to HTTPS and FTP access is not allowed. The FileZilla Client freeware (not included) supports FTPES.

NetPage Troubleshooting

My Groups and My Messages don’t work

Check that cookies are enabled in your web browser.

Number list, Common Groups, or Common Messages are unsatisfactorily updated

Refresh the cache memory on the web browser. If they still are unsatisfactory, refresh caching proxy (if any). In, for example Microsoft Internet Explorer, this can be achieved by pressing CTRL+F5.

Entire Message history including column headings doesn’t appear

The Java Virtual Machine may be missing on your PC. Contact your IT department for assistance.

Message history is not running, although messages are sent and column headings are visible.

There might be a firewall preventing you from receiving data from the NetPage server. Contact your IT department to open port number 5891 in the firewall, in the direction from the web client to the NetPage server.

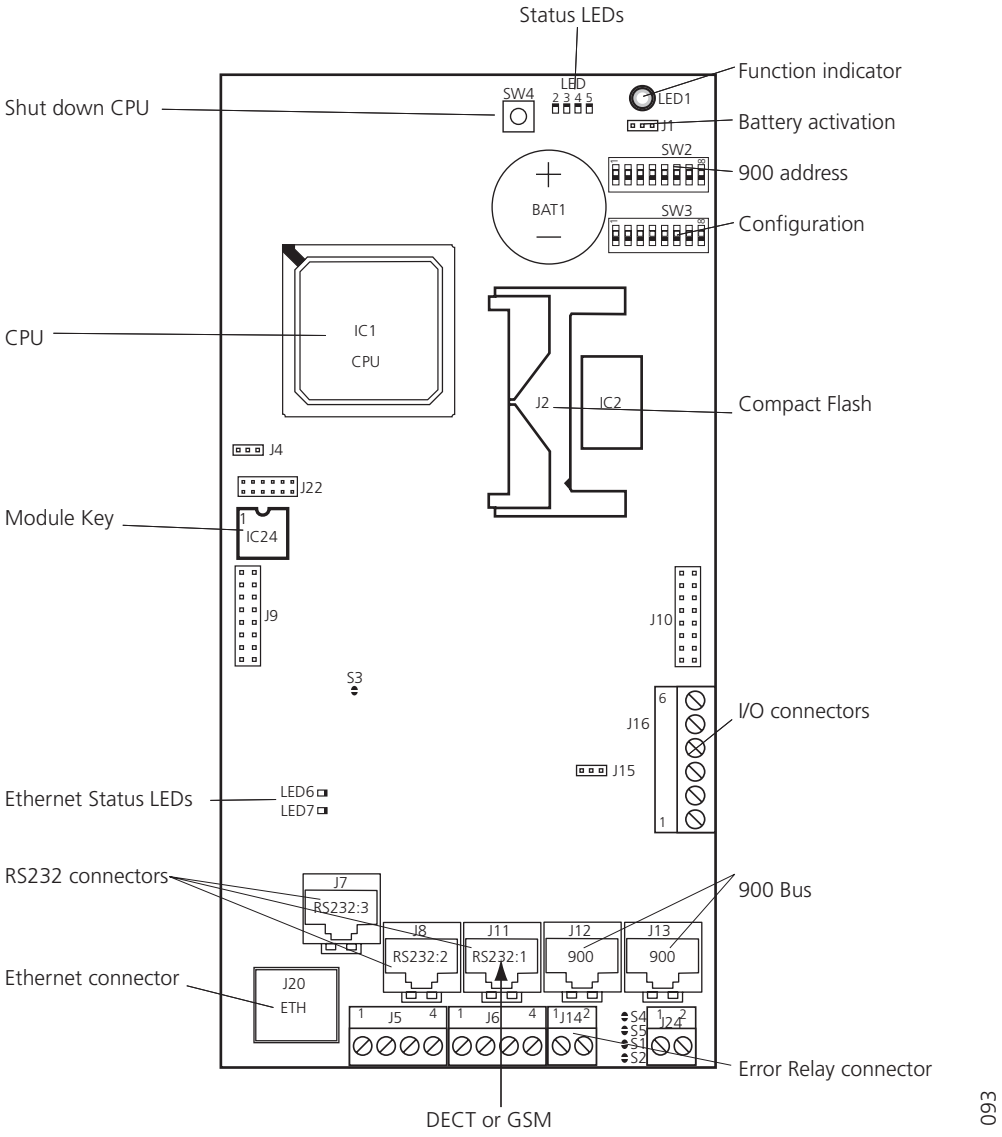
Reboot after image installation w/o restoring the parameters

When installing a new image file it is recommended to take a parameter backup in advanced and restore the backup afterwards. If reboot was selected w/o restoring the parameters all configuration including the IP-Network parameters is lost. However is a fixed IP address is used you can connect to the AIWS web interface by using this fixed IP address. When connecting to the AIWS the setup wizard will start automatically as usual after a factory reset. If a backup file is available you can select cancel for the setup wizard, go to configuration - other settings - backup/restore. Restore the old setting by choosing your backup file and select restore. Finally a reboot is needed to activate the old parameter settings.

Built-in tools in AIWS

The AIWS hardware has different LEDs to indicate the status and besides that the possibility to show active faults and logging the faults.

Figure 185: AIWS Circuit board



Tools	Description
Function Indicator	Refer to the table Function Indicator *on page 428* or Getting Started on page 412.
LED6	ON: Communication on Ethernet

LED7	ON: 100MBit/s OFF: 10MBit/s
Unlicenced mode	Unlicenced mode is activated by SW3, section 5 (pin 5), refer to Selection of Operating Mode on page 427, and a restart. AIWS will run with full functionality for 2 hours, then it stops! If it works in unlicenced mode and not in normal mode you probably have a licence problem. Refer to Licence on page 425 to install the valid license. Variants on page 485 describes which features are supported by which kind of licenses. **Note:** Do not forget to switch back to normal mode and restart the module.

Advanced Troubleshooting

AIWS Advanced Configuration page (requires administrator or system administrator rights) includes pages for advanced troubleshooting.

1. Click **Configuration** on the start page. The **AIWS Configuration** page appears.
2. Select **Other Settings** > **Advanced Configuration** in the left menu. The **AIWS Advanced Configuration** page appears.
3. Click the **Troubleshoot** button. The **Troubleshoot** page appears.
4. In the left menu in the *Troubleshoot* page there are links to pages where it is possible to view logs and find detailed information about the system.

- View Info Log
  Information saved in a volatile memory.
- View Error Log
  Errors and notifications saved in a permanent memory.
- View Complete Log
  (requires sysadmin rights)
  The Complete Log includes Info Log, Error Log and additional debug information.

Note:
This page shall only be used when information is requested by Technical Support.

- System Information
  - Information about module status.
  - Debug settings can be made. Standard debug is set by default but it can be extended to show more details.

- Send Test Message
  Possibility to send a test message to an entered Call ID.
- IP Statistics
  Information about the number of sent Unite messages and retransmissions for entered IP destinations can be viewed.
  The syntax of the listed IP addresses in the IP Statistics page is:
  <IP address> (<No. of sent messages>)[- !] where " - !" indicates that retransmissions have been made.
- Disk Status
  Status of the partitioned Compact Flash used by AIWS.
- Module Fault List
  Level of seriousness for different kinds of log events can be set. These events can appear in the Status Log (further described in chapter Status on page 369).

AIWS factory reset

There is no general factory reset procedure available on the AIWS. You manually need to go to the AIWS advanced configuration (AIWS start page - configuration - other settings - advanced configuration), check all the settings and press the "factory" button if available to reset the setting to default.

- Device management
- Phone book
- remote management (remote connection, open ports and serial port channels)
- general settings
- IP-Dect
- device handling (portable devices, desktop chargers, advanced chargers)
- message distribution(Alarm, Mobile Data, Location and Availability info)
- UNS (operating mode)
- User server
- logging (status log, system activity log, advanced parameters)
- service discovery
- Time settings
- Security web access
- password policy
- passwords needs to be changed/reset manually (sysadmin user/password needs to be known)

- network
- license

A work around is to install the image again on the AIWS flash card, see Replacement of the Compact Flash on page 449. This will clear all settings to default including the license key and network parameters. Of course you should not restore a AIWS backup file afterwards.

What to consider when replacing a module

Refer to Installing Elise2 Server, General Information on page 425 and Installation on page 430 to find information about:

- Address
- Jumpers
- Switches
- Cable connections
- Battery

Licences are defined in the Module key. The type of information that is located on the Compact Flash is software, configuration settings, fault logs, templates, etc.

When replacing a faulty ELISE2 hardware module, the Module Key and Compact Flash can be moved from the faulty ELISE2 module to the new ELISE2. By doing this, the licenses and the settings can be used directly on the new ELISE2.

See Getting Started on page 412 and Installation on page 430 for a detailed description on how to work with the ELISE2 hardware.

Glossary

A

ACommunication Manager	Avaya Communication Manager an Avaya PBX
AIWS	Avaya In-Building Wireless Server Module that enables wireless services to and from the portable devices.

B

BPC	Battery Pack Charger

C

Central Phonebook	A Phonebook stored in a database in the control module or reached from the control module.
Communication Manager	Communication Manager an Avaya PBX, synonymous for ACommunication Manager
Company Phonebook	A Phonebook that is configured in and uploaded to a telephone from the Device Manager. The entries are locked for editing.
Contacts	The name of the phonebook in a cordless telephone.
CSV	Comma Separated Value: A file containing data separated by commas.

D

DECT	Digital Enhanced Cordless Telecommunications: global standard for cordless telecommunication.
DGH	Device Group Handler
DH	Device handler
DHCP	Dynamic Host Configuration Protocol a protocol for automating the configuration of computers that use TCP/IP
DTMF	Dual Tone Multiple-Frequency

E

Elise 2 Server	Embedded LInux SErver: A hardware platform used for AIW.

F

FER	Frame Error Rate

FTP	File Transfer Protocol
G	
GAP	Generic Access Profile: communication protocol standard within DECT, that guarantees compatibility of systems and components
GoS	Grade of Service
GUI	Graphical User Interface
I	
IP	Internet Protocol:
IPBS	IP-DECT Base Station
IPDI	The unique global GAP identity number for the DECT registration. IPDI is exchanged between handsets during the Easy replacement procedure.
IPEI	International Portable part Equipment Identity: The unique global GAP identity number for the handset. This code is needed for the system administrator to enable network subscription.
IPO	IP Office an Avaya PBX
ISDN	Integrated Services Digital Network
J	
JRE	Sun Java Runtime Environment
L	
LAN	Local Area Network: a group of computers and associated devices that share a common communication line.
LDAP	Lightweight Directory Access Protocol
N	
Number	*PDM, AIS:* Settings for the complete set of parameters of a single device, tied to a specific identity.
NTP	Network Time Protocol a standard for synchronization of clocks via packet-based communication networks.
O	
OAP	Open Access Protocol:

	XML based protocol used to create customized applications for Unite access.
OTA	Over The Air

P

PBX	Private Branch Exchange: telephone system within an enterprise that switches calls between local lines and allows all users to share a certain number of external lines.
PDM	Portable Device Manager
PKCS#12	A chryptography standard, defining a file format used to store keys and certificates.
PoE	Power over Ethernet
Portable, Portable device	In this document a portable device or portable means cordless telephone.
PSTN	Public Switched Telephone Network
PSCN	Primary receiver Scan Carrier Number: defines the RF carrier on which one receiver will be listening on the next frame.

Q

QoS	Quality of Service
QSIG	Q-signalling: a set of standards defined by ECommunication ManagerA, ESTI and ISO for connection PBX to PBX in networks.

R

RFP	Radio Fixed Part. DECT base-station part of the DECT Infrastructure.
RFPI	Radio Fixed Part Identity.
RSSI	Radio Signal Strength Information
RS232	Industry standard serial communication protocol
RTP	Real-Time Transport Protocol

S

SIP	Session Initiation Protocol
Site	Contains information of devices and Numbers
SMS	Short Message Service: global protocol for sending messages between cordless telephones.
SST	Site Survey Tool

T

ToS	Type of Service

U

UNS	Unite Name Server
USB	Universal Serial Bus a serial bus standard to interface devices, for example connect computer peripherals such as mice, keyboards, scanners etc.
User ID	User ID identifies the set of user parameters possible to save and administrate via PDM. It can be moved together with user parameters between telephones. It is normally set automatically at DECT subscription to be equal to call number.

V

VoIP	Voice over IP
VoWiFi	Voice over Wireless Fidelity: is a wireless version of VoIP and refers to IEEE 802.11a, 802.11b or 802.11g network.

W

WiFi	WiFi stands for Wireless Fidelity and is a term developed by the Wi-Fi Alliance® to describe wireless local area network (WLAN) products that are based on the Institute of Electrical and Electronics Engineers' (IEEE) 802.11 standards. Today, most people use WiFi as a reference to wireless connectivity.
WSM	see *AIWS*

Related Documents

User Manual, Avaya 3725 DECT Telephone	21-603358
User Manual, Avaya 3720 DECT Telephone	21-603360
Function Description, IP-DECT System for Avaya	21-603368

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